Final Initial Study
Air Quality

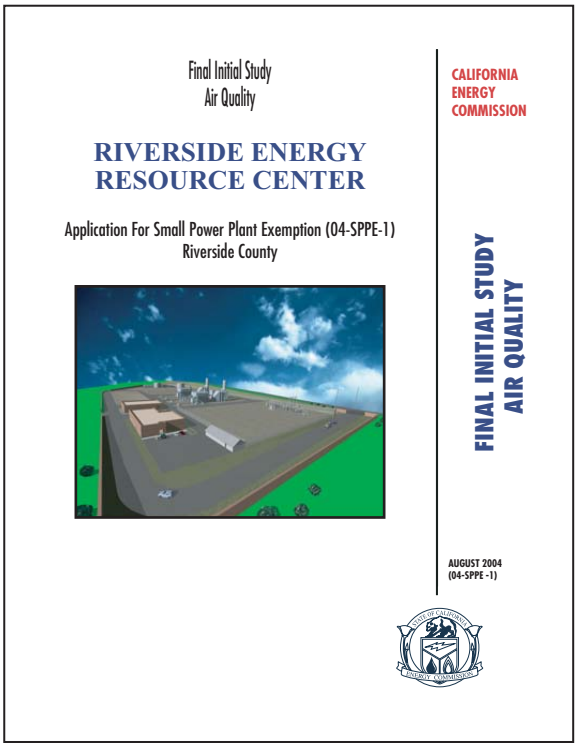
CALIFORNIA
ENERGY
COMMISSION

RIVERSIDE ENERGY RESOURCE CENTER

Application For Small Power Plant Exemption (04-SPPE-1)
Riverside County

FINAL INITIAL STUDY
AIR QUALITY

AUGUST 2004
(04-SPPE -1)



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REVISED EXECUTIVE SUMMARY

Testimony of James W. Reede, Jr., Ed.D

This Final Initial Study section contains the California Energy Commission staff's final Air Quality evaluation of the Riverside Public Utilities' Application for a Small Power Plant Exemption (04-SPPE-01).

The Energy Commission has the exclusive power to certify all sites and related facilities for thermal electrical power plants of 50 MW or larger within the state. A provision of the Warren-Alquist Act allows the Energy Commission to exempt power plants up to 100 MW from the site certification process if it finds that no substantial adverse impact on the environment or energy resources will result from the construction or operation of the proposed facility. Under this exemption process the Energy Commission prepares the environmental document that will be used by local and state agencies that issue the necessary permits.

In this Final Initial Study, staff examined the direct, indirect and cumulative environmental, public health and safety, and transmission systems engineering aspects of the Riverside Energy Resource Center (RERC) project and presents its conclusions and proposed conditions of exemption that staff believes are necessary to mitigate or avoid significant adverse environmental impacts of the proposed facility, if exempted by the Commission. Staff received comments on the Draft Initial Study from the Riverside Airport manager, CalTrans, Riverside County Airport Land Use Commission, US Army Corps of Engineers, CURE, South Coast Air Quality Management District and the applicant. Those comments are addressed in this Final Initial Study and in some instances staff added additional mitigation measures to address the issue raised by the commenter.

BACKGROUND

On April 29, 2004, Riverside Public Utilities (RPU) filed an application for a Small Power Plant Exemption (04-SPPE-01), and staff began its review of the project. The Energy Commission appointed a Siting Committee on May 5, 2004, to oversee the SPPE application.

The analyses contained in this Initial Study are based upon information from: 1) the SPPE Application for the RERC; 2) the applicant's responses to data requests from both Energy Commission and intervenors; 3) interested federal, state, and local agencies; 4) various documents and publications listed at the end of each section and; 5) public workshops and site visits.

The Energy Commission has made a substantial effort to notify interested parties and encourage public participation. The Energy Commission has:

- Mailed Notices of Receipt to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on April 29, 2004.
- Mailed a Notice of Public Hearing and Site Visit on May 11, 2004 to responsible and trustee agencies, persons with contiguous property to the proposed project,

sensitive receptors, larger (>100 employees) private businesses in the area and individuals that have expressed interest in the project;

- Placed an advertisement notice in the Riverside Press Enterprise on May 14, 2004 to announce the Public Hearing and Site Visit and placed 6,111 information flyers as inserts in the Sunday, May 23, 2004 edition of the Riverside Press Enterprise;
- Conducted an Informational Hearing and Site Visit on May 26, 2004;
- Held Public Workshops on May 26 and June 17, 2004;
- Mailed a Notice for a Draft Initial Study Workshop on July 2, 2004 to responsible and trustee agencies, persons with contiguous property to the proposed project, and individuals that have expressed interest in the project.
- Staff issued a Draft Initial Study on July 8, 2004 and sent notices of such to responsible and trustee agencies, libraries, persons with contiguous property to the proposed project and linears, and individuals that have expressed interest in the project.
- Staff held a Draft Initial Study workshop on July 15, 2004, and accepted public comments until July 28, 2004.

PROJECT DESCRIPTION

RPU proposes to build and operate a nominal 96 MW simple-cycle power plant on a 12-acre fenced site within the City of Riverside, California. This proposed facility is referred to as the Riverside Energy Resource Center (RERC). RPU would develop, build, own and operate the facility. The proposed site is owned by the City of Riverside and is adjacent to the City's Waste Water Treatment Plant (WWTP) in a light industrial / manufacturing area. The WWTP is located on the west side of the project and includes a 3.3 MW cogeneration facility. The cogeneration plant at the WWTP would be the source of power to cold (black) start the RERC plant. The two facilities would be cross-tied for both electrical power and compressed air. The Waste Water Treatment Plant is in the second year of six-year Capital Improvement Program that is designed to upgrade and maintain the cogeneration plant and WWTP. (**See Project Description**)

The power plant and associated administration building and warehouse would occupy approximately 8 of the 12 acres with the additional 4 acres reserved for equipment storage and construction parking. The proposed plant layout is such that any future expansion could be accomplished with a minimum of piping or equipment relocation. No expansion is currently proposed; however, the applicant has indicated that the plant may be expanded in the future to accommodate increased localized demand. There are no specific plans at this time. Therefore, any expansion would be too speculative at this time to analyze. If the applicant should choose to expand the plant at some future date, they would be required to file a new application with the Commission and be subject to environmental analysis at that time.

The plant would consist of two General Electric LM6000 PC NxGen SPRINT combustion turbine generators equipped with inlet air chiller coils, exhaust ducting, flue gas treatment system to meet the proposed air emission limits, a common chiller package

with cooling tower, gas compressor equipment, water storage and treatment facilities, emission monitoring system, zero liquid discharge (ZLD) wastewater treatment system and electrical transmission and interconnection system and associated auxiliary systems and equipment.

The proposed project would include the construction of approximately 1.75 miles of new double circuit 69kV transmission line interconnecting RERC to the Mountain View and Riverside substations. All transmission line construction would occur in an existing transmission line right-of-way. No new residential property easements are proposed.

Natural gas would be supplied to RERC from a Sempra transmission line that passes by to the northeast corner of the site boundary. A short (~140 ft.) natural gas service line would be constructed to connect from the existing Sempra transmission pipeline to the onsite meter station.

Potable water for sanitary use would come directly from the City's general water supply. The adjacent WWTP would supply reclaimed water for plant process and cooling water. The RERC would utilize a Zero Liquid Discharge (ZLD) system that would eliminate the need to discharge process wastewater to the WWTP.

The proposed project is approximately 0.5 miles north of the Riverside Municipal Airport. The cooling tower cells are parallel to the flight path.

There are no public schools within a ¾ mile radius of proposed project. The nearest public schools are Mission Middle School approximately at 0.8 mile, Indian Hills Elementary School at 0.8 mile, Terrance Elementary approximately 1.1 miles west of the Project site, Foothill Elementary approximately 2 miles southwest of the Project site, and Norte Vista High approximately 1.4 miles west of the Project site. The nearest private school is United Submission Academy (Martial Arts) on Jurupa Ave, approximately 0.3 miles from the facility.

A more complete description of the project, including a description and maps of the proposed upgrades to the transmission, water, and natural gas pipeline upgrades, is contained in the **PROJECT DESCRIPTION** section of the Final Initial Study.

STAFF'S ASSESSMENT

Each technical area section of the Final Initial Study contains a discussion of impacts, and where appropriate, mitigation measures presented in the form of conditions of exemption. The Final Initial Study includes staff's discussion of:

- The environmental setting surrounding the project area;
- Potential impacts to public health and safety, and measures proposed to mitigate these impacts; and
- Potential environmental impacts and measures proposed to mitigate these impacts.

STAFF CONCLUSIONS

The staff has concluded that, with the mitigation measures proposed by the applicant and the measures recommended herein, the RERC Project will not result in any significant direct, indirect or cumulative impacts to public health, safety energy resources or the environment. Therefore, staff recommends Energy Commission approval of the Small Power Plant Exemption.

Summary of Conclusions: Environmental and Engineering Checklist

	Potentially Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
ENVIRONMENTAL				
Agricultural Resources		X		X
Air Quality		X		
Biological Resources		X		
Cultural Resources		X		
Energy Resources				X
Geology and Paleontology			X	
Hazardous Materials and Waste		X		
Hydrology and Water Quality			X	
Land Use and Recreation			X	
Noise			X	
Public Health			X	
Socioeconomics				X
Traffic & Transportation		X		
Visual Resources		X		
Waste Management		X		
ENGINEERING				
Transmission Line Safety & Nuisance			X	
Transmission System Engineering			X	

(a) Staff has requested this information through Data Requests and expects to receive it in mid-July.

ENVIRONMENTAL JUSTICE

The minority population within six-miles of the site is 57.52 percent, which is slightly higher than the 54.4 percent minority population of the City of Riverside and the state. The population below the poverty level is 15.03 percent within six miles of the site, which is lower than the 15.8 percent for the City of Riverside but slightly more than that of the state. The Census block immediately adjacent to the project has only two persons and they are both of non-white Hispanic descent (Socioeconomics **Figures 1, 2, & 3**). Staff's analysis shows that with mitigation, there would be no significant direct or cumulative impact to any population including areas with high concentrations of minority or low-income people.

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INTRODUCTION

James W. Reede, Jr., Ed.D

PURPOSE OF THIS REPORT

The applicant, Riverside Public Utilities (RPU) filed a request for a Small Power Plant Exemption (SPPE) with the California Energy Commission (Energy Commission) on April 29, 2004. The Final Initial Study was issued July 29, 2004. This Air Quality section completes the Final Initial Study evaluation.

California's Warren-Alquist Act (Pub. Resources Code (PRC) § 25000 et seq.) gives the Energy Commission the exclusive power to certify all sites and related facilities for thermal electrical power plants of 50 MW or more within the state (Pub. Resources Code § 25120 and 25500 et seq.). Section 25541 of the Warren-Alquist Act allows the Energy Commission to exempt power plants up to 100 MW from the site certification process if it finds that no substantial adverse impact on the environment or energy resources will result from the construction or operation of the proposed facility.

The proposed plant is also subject to the requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). Public Resources Code section 25519 (c) states that the Energy Commission shall act as lead agency under CEQA for projects that it either certifies or exempts from certification. Staff has prepared this Initial Study in accordance with CEQA and Title 20, California Code of Regulations (CCR) § 1934 et seq. and 2300 et seq.

Staff's environmental analysis in the Initial Study documents the factual basis for staff's recommendation regarding the project's potential to result in substantial adverse impacts on the environment or energy resources.

Staff has included Conditions of Exemption in various technical areas, which if implemented along with the Applicant's proposed mitigation measures, should ensure that the project would result in no substantial adverse impact. In addition, staff will adopt a reporting or monitoring program designed to ensure compliance during project development and avoid significant impacts or the need for further mitigation.

The Energy Commission's Siting Committee (Committee) will conduct a hearing at which all parties will have an opportunity to comment on the Initial Study and make recommendations on the SPPE application. The Committee will consider the application, staff's analysis, and any other evidence presented in the proceedings to determine whether to recommend granting the SPPE. Following the hearing, the Committee will prepare and publish a proposed decision. The full Commission will then hold a hearing for final arguments and render a decision on the application.

Title 14, California Code of Regulations, section 15063 (d) states that an Initial Study shall contain the following items:

- A description of the project including the location of the project;
- An identification of the environmental setting;

- An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- A discussion of the ways to mitigate the significant effects identified, if any;
- An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
- The name of the person or persons who prepared or participated in the Initial Study.

The Energy Commission has made a substantial effort to notify interested parties and encourage public participation. The Energy Commission has:

- Mailed Notices of Receipt to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on April 29, 2004 for the Application for Small Power Plant Exemption;
- Mailed a Notice of Public Hearing and Site Visit on May 11, 2004 to responsible and trustee agencies, persons with contiguous property to the proposed project, sensitive receptors, larger (>100 employees) private businesses in the area and individuals that have expressed interest in the project;
- Placed an advertisement notice in the Riverside Press Enterprise on May 14, 2004 to announce the Public Hearing and Site Visit and placed 6,111 information flyers as inserts in the Sunday, May 23, 2004 edition of the Riverside Press Enterprise;
- Conducted an Informational Hearing and Site Visit on May 26, 2004;
- Held Public Workshops on May 26 and June 17, 2004;
- Mailed a Notice for a Draft Initial Study Workshop on July 5, 2004 to responsible and trustee agencies, persons with contiguous property to the proposed project, and individuals that have expressed interest in the project.
- Staff issued a Draft Initial Study on July 8, 2004 and sent notices of such to responsible and trustee agencies, libraries, persons with contiguous property to the proposed project and linears, and individuals that have expressed interest in the project.
- Staff held a Draft Initial Study workshop on July 15, 2004, and accepted public comments until July 28, 2004.
- Staff issued a Final Initial Study on July 29, 2004 less the Air Quality section.

AIR QUALITY

Testimony of William Walters and Lisa Blewitt

INTRODUCTION

This analysis evaluates the expected air quality impacts of the emissions of criteria air pollutants due to the construction and operation of the Riverside Public Utilities (RPU or applicant) Riverside Energy Resource Center (RERC) Project, which will be located in the City of Riverside, Riverside County.

In carrying out the analysis, the California Energy Commission staff evaluated the major issues identified in the CEQA Air Quality Checklist. The following sections address the questions included in the Checklist.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Under the Warren-Alquist Act, Public Resources Code section 25541, staff is charged with evaluating whether the project as proposed would have a substantial adverse impact on the environment or public health and safety. Staff has identified the following LORS as potential significance criteria for evaluating whether the project as proposed would have a substantial adverse impact on air quality. For this project, the South Coast Air Quality Management District (SCAQMD or District) will be responsible for ensuring that the project complies with all applicable LORS.

FEDERAL

The United States Environmental Protection Agency (USEPA) has issued a number of National Ambient Air Quality Standards (NAAQS). Pollutants regulated under these standards include ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. Additional information regarding the NAAQS is provided in the Setting Section. The District and the California Air Resources Board (CARB) are the responsible agencies for providing attainment plans and meeting attainment with these standards.

Under the federal Clean Air Act new and modified major stationary sources of air pollution must undergo New Source Review (NSR) before commencing construction. NSR requirements vary depending on the attainment status of the area where the facility is to be located. Nonattainment area NSR is a permitting process for evaluation of those pollutants that violate federal ambient air quality standards. Conversely, Prevention of Significant Deterioration (PSD) requirements apply to areas that are in attainment of NAAQS. The nonattainment area NSR analysis has been delegated by the USEPA to the SCAQMD under Regulation XIII. The USEPA determines the conformance with the PSD regulations. The PSD requirements apply only to those projects (known as major sources) that exceed 250 tons per year (tpy) for any pollutant, or any new facility or stationary source category that is listed in 40 CFR Part 52.21(b)(1)(i)(a), and that emits 100 tons or more per year of any criteria pollutant. Since RERC is not a steam electric plant and does not meet any other source category listed in 40 CFR Part 52.21(b)(1)(i)(a), it is subject to the 250-tpy PSD threshold.

Emissions from RERC are proposed to be much less than 250-tpy; therefore PSD does not apply to the RERC project (EPA 2004a).

Title V of the federal Clean Air Act requires states to implement and administer an operating permit program to ensure that large sources operate in compliance with all requirements specified in different air quality regulations that affect an individual project. Under the delegated SCAQMD Title V program, administered under Regulation XXX, the RERC project will require a Title V permit.

The RERC is also subject to the federal New Source Performance Standards (NSPS) for the combustion turbines (40 CFR 60 Subpart GG), which is administered by the SCAQMD under Regulation IX (NSPS). This regulation specifies pollutant emission requirements that are less stringent than those that will be required by NSR requirements for Best Available Control Technology (BACT).

The USEPA has reviewed and approved the South Coast Air Quality Management District's regulations and has delegated to the SCAQMD implementation of the federal NSR, Title V, and NSPS programs. The District implements these programs through its own rules and regulations, which are, at a minimum, as stringent as the federal regulations. In addition, the USEPA has also delegated to the District the authority to implement the federal Clean Air Act Title IV "acid rain" program. The Title IV regulation requirements will include obtaining a Title IV permit prior to operation, the installation of continuous emission monitors to monitor acid deposition precursor pollutants, and obtaining Title IV allowances for emissions of SO_x. Regulation XXXI implements the federal Title IV program. Therefore, compliance with the District's rules and regulations should result in compliance with federal Title IV.

STATE

CARB has issued a number of California Ambient Air Quality Standards (CAAQS). These standards include pollutants not covered under the NAAQS and also require more stringent standards than provided under the NAAQS. Pollutants regulated under these standards include ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Additional information regarding the CAAQS is provided in the Setting Section.

The California State Health and Safety Code section 41700 requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

LOCAL

The proposed project is subject to South Coast Air Quality Management District Rules and Regulations, including the following:

Regulation IV — Prohibitions

This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, startup/shutdown exemptions and breakdown events.

Rule 403 — Fugitive Dust

This rule requires that the applicant prevent, reduce or mitigate fugitive dust emissions from the project site. Rule 403 restricts visible fugitive dust to the project property line, restricts the net PM_{10} emissions (between up and down wind measurements) to less than 50 $\mu g/m^3$ and restricts the tracking out of bulk materials onto public roads. Additionally, the applicant must utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include, adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities.

Rule 404 – Particulate Matter – Concentration

This rule limits particulate matter grain loading to a level of 0.0271 grains per dry standard cubic foot (dscf) for exhaust flows of 176,600 dry standard cubic feet per minute (dscfm), and 0.0253 grains/dscf for exhaust flows of 211,900 dscfm. The proposed turbines are guaranteed to emit no more than 21,000 grains (3 lbs) of PM_{10} per hour, which is equivalent to 0.0018 grains/dscf at an exhaust flow rate of 193,164 dscfm, thus the concentration is well below the limits of Rule 404.

Rule 407 — Liquid and Gaseous Air Contaminants

This rule limits CO emissions to 2,000 ppm and SO_2 emissions to 500 ppm, averaged over 15 minutes. Equipment that complies with Rule 431.1 is exempt from the SO_2 limit. The applicant will be required to comply with Rule 431.1 and thus the sulfur limit of Rule 407 will not apply.

Rule 409 — Combustion Contaminants

This rule restricts the discharge of contaminants from the combustion of fuel to 0.23 grams per cubic meter (0.1 grain per cubic foot) of gas, calculated to 12% CO_2, averaged over 15 minutes.

Rule 431.1 — Sulfur Content of Gaseous Fuels

This rule restricts the sale or use of gaseous fuels that exceed a sulfur content limit. The sulfur content limit for natural gas is 16 ppmv calculated as H_2S. This rule also establishes monitoring and reporting requirements, as well as test methods to be used.

Rule 475 — Electric Power Generating Equipment

This rule limits combustion contaminants (PM_{10}) from electric power generating equipment, with a maximum rating of more than 10 net megawatts, to 11 pounds per hour and 23 milligrams per cubic meter @ 3% O_2 (averaging time subject to Executive Officer decision).

Regulation IX — Standards of Performance for New Stationary Sources

Regulation IX incorporates provisions of Part 60, Chapter I, Title 40 of the Code of Federal Regulations (CFR) and is applicable to all new, modified or reconstructed sources of air pollution. Subpart GG of this regulation applies to stationary gas turbines and establishes limits of particulate matter, SO_2, and NO_2 emissions from the facility as well as monitoring and test method requirements.

Regulation XIII — New Source Review

Regulation XIII will apply to the non-reclaim pollutants (VOC, CO, PM10, SO2), and Regulation XX will apply for NOx. This regulation requires the use of Best Available Control Technology (Rule 1303 a.) and offsets for pollutants with emissions over 4 tons per year, except CO where offsets are triggered if emissions exceed 29 tons per year (Rules 1303 b.2. and 1304 d.1.).

Regulation XX — Regional Clean Air Incentives Market (RECLAIM)

The Regional Clean Air Incentives Market (RECLAIM) is designed to allow facilities flexibility in achieving emission reduction requirements for NO_x and SO_x through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions. The RECLAIM program establishes an initial allocation (beginning in 1994) and an ending allocation (to be attained by the year 2003) for each facility within the program (Rule 2002). Each facility then reduces their allocation annually on a straight line from the initial to the ending. The RECLAIM program supercedes other district rules, where there are conflicts. As a result, the RECLAIM program has its own rules for permitting, reporting, monitoring (including CEM), record keeping, variances, breakdowns and the New Source Review program, which incorporates BACT requirements (Rules 2004, 2005, 2006 and 2012). RECLAIM also has its own banking rule, RECLAIM Trading Credits (RTCs), which is established in Rule 2007. The RERC is exempt from the SO_x RECLAIM program (Rule 2011) because it uses natural gas exclusively (per Rule 2001). However, it will be a NO_x RECLAIM project and, therefore, will be subject to the rules of RECLAIM for NO_x emissions.

SETTING

CLIMATOLOGY

The climate of the Riverside area is controlled by the mountain ranges located on three sides (San Bernardino Mountains to the north, San Jacinto Mountains to the east, and Santa Ana Mountains to the south) and a semi-permanent subtropical high-pressure system that is located off the Pacific Ocean. Hot summers, mild winters, and small amounts of precipitation characterize the climate in the Riverside area (RERC 2004d, page 48). The project site receives an average of about 10 inches of rain annually (WC 2004).

Temperature, wind speed, and wind direction data have been collected at the Mission Boulevard meteorological monitoring station, which is located approximately 4 miles northeast of the project site (RERC 2004d, page 48). In summer (June, July, and

August), daily high and low temperatures in Riverside average about 92°F and 62°F (WC 2004), respectively. In winter (December, January, and February), average lows are about 43°F, and average highs are about 69°F. Winds in the region are generally light and easterly in the winter, but strong and westerly in the spring, summer, and fall (RERC 2004d, page 48).

Along with the wind flow, atmospheric stability and mixing heights are important factors in the determination of pollutant dispersion. Atmospheric stability reflects the amount of atmospheric turbulence and mixing. In general, the less stable an atmosphere, the greater the turbulence, which results in more mixing and better dispersion. The mixing height, measured from the ground upward, is the height of the atmospheric layer in which convection and mechanical turbulence promote mixing. Good ventilation results from a high mixing height and at least moderate wind speeds with the mixing layer.

AMBIENT AIR QUALITY

The project is located within the jurisdiction of the South Coast Air Quality Management District (District). The applicable federal and California ambient air quality standards (AAQS) are presented in **AIR QUALITY Table 1**. As indicated in this table, the averaging times for the various air quality standards (the duration over which they are measured) range from 1-hour to annual average. The standards are read as a mass fraction, in parts per million (ppm), or as a concentration, in milligrams or micrograms of pollutant per cubic meter of air (mg/m^3 or $\mu g/m^3$).

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.08 ppm (157 µg/m^3)	—
	1 Hour	0.12 ppm (235 µg/m^3)	0.09 ppm (180 µg/m^3)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	—
	1 Hour	—	0.25 ppm (470 µg/m^3)
Sulfur Dioxide (SO_2)	Annual Average	0.030 ppm (80 µg/m^3)	—
	24 Hour	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	3 Hour	0.5 ppm (1,300 µg/m^3)	—
	1 Hour	—	0.25 ppm (655 µg/m^3)
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	50 µg/m^3	20 µg/m^3
	24 Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	15 µg/m^3	12 µg/m^3
	24 Hour	65 µg/m^3	—
Sulfates (SO_4)	24 Hour	—	25 µg/m^3
Lead	Calendar Quarter	1.5 µg/m^3	—
	30 Day Average	—	1.5 µg/m^3
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/m^3)
Visibility Reducing Particulates	1 Observation (8 hour)	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: CARB 2004.

The USEPA, California Air Resource Board (CARB), and the local air district classify an area as attainment, unclassified, or nonattainment, depending on whether or not the monitored ambient air quality data show compliance, insufficient data is available, or non-compliance with the ambient air quality standards, respectively. The RERC is located within the South Coast Air Basin and, as stated above, is under the jurisdiction of the South Coast Air Quality Management District. This area is designated as nonattainment for both the federal and state ozone and PM_{10} standards. The Air Basin is also designated as nonattainment of the federal CO standard; however, the portion of Riverside County located in the SCAB is in attainment of the state CO standard, which is determined at the county level rather than for the basin as a whole. **AIR QUALITY Table 2** summarizes federal and state attainment status of criteria pollutants for the SCAB.

AIR QUALITY Table 2
Federal and State Attainment Status for the South Coast Air Basin

Pollutant	Attainment Status	
	Federal	**State**
Ozone – 1 hour	Extreme-20 Nonattainment [a]	Extreme Nonattainment
Ozone – 8 hour	Severe-17 Nonattainment [b]	N/A
CO	Serious Nonattainment [c]	Attainment
NO_2	Unclassified/Attainment [d]	Unclassified/Attainment [d]
SO_2	Unclassified/Attainment [d]	Unclassified/Attainment [d]
PM_{10}	Serious Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment [f] (Proposed)	Nonattainment [e]
Lead	No Designation	Attainment

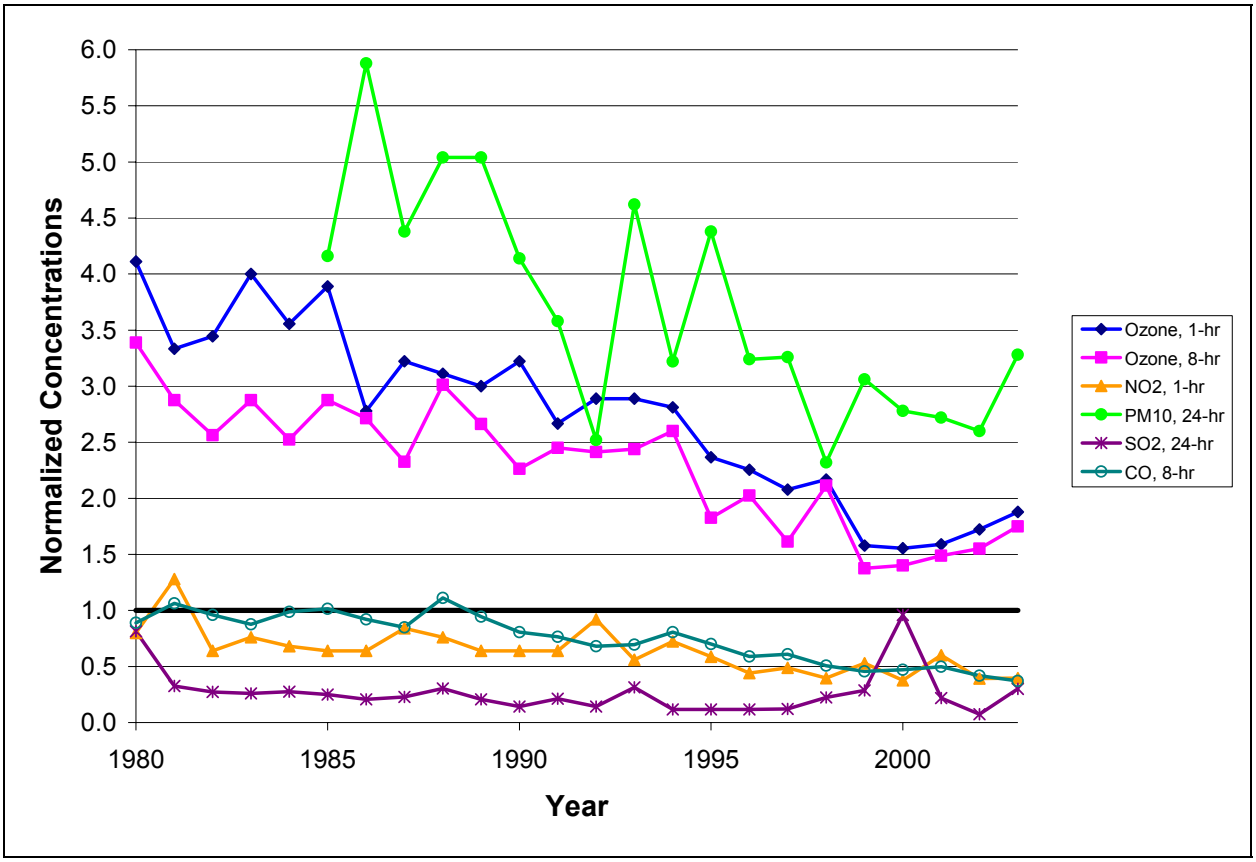
Source: CARB 2004, USEPA 2004b.
N/A – Not Applicable
Notes:

a. Extreme-20 means that the area has a design value of 0.280 ppm and above, and has 20 years from original designation date 1990 (i.e. until 2010) to meet attainment status.
b. Severe-17 means that the area has until Year 2021 to meet attainment status (the designation year of 2004 plus 17 years).
c. For the Federal attainment status, the SCAB is considered as a whole to be in nonattainment, whereas the State attainment status has been determined at a County level. Therefore, the Riverside area is considered to be in attainment of the State standard for CO, but in nonattainment of the Federal standard.
d. Unclassified/Attainment – The attainment status for the subject pollutant is classified as either attainment or unclassified.
e. State $PM_{2.5}$ attainment status was recommended in the 2003 Staff Report Attachment B - Proposed Amendments to the Area Designations available at: http://www.arb.ca.gov/desig/desig03/desig03.htm, and adopted into the California Code of Regulations (Title 17 Section 60210) by the Office of Administrative Law on June 7, 2004 and become operative on July 7, 2004.
f. Proposed Federal $PM_{2.5}$ attainment status recommended by the California Air Resources Board on February 11, 2004. The USEPA plans to finalize $PM_{2.5}$ designations by December 15, 2004 (http://www.arb.ca.gov/desig/pm25desig/pm25desig.htm).

The project site is in Riverside County, within a light industrial/manufacturing area in the City of Riverside, adjacent to the City of Riverside's Wastewater Treatment Plant. The monitoring station closest to the proposed project site is the Magnolia Street Station in Riverside, located approximately 3.5 miles southeast of the project site. This station monitors ambient concentrations of CO and $PM_{2.5}$. The Riverside – Rubidoux Station which is located approximately four miles northeast of the project site on Mission Boulevard near the intersection of 42nd Street, monitors ambient concentrations of ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$.

AIR QUALITY Figure 1 summarizes the historical air quality data for the project location, recorded at the Magnolia Street (CO only) and Rubidoux air monitoring stations. In **AIR QUALITY Figure 1**, the short term normalized concentrations are provided from 1980 to 2003. Normalized concentrations represent the ratio of the highest measured concentrations in a given year to the most-stringent applicable national or state ambient air quality standard. Therefore, normalized concentrations lower than one (1) indicate that the measured concentrations were lower than the most-stringent ambient air quality standard for that pollutant.

AIR QUALITY Figure 1
Normalized Maximum Short-Term Historical Air Pollutant Concentrations
Riverside – Rubidoux



A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. For example, in 1999 the highest 1-hour average ozone concentration measured in Rubidoux was 0.142 ppm. Since the most stringent ambient air quality standard is the state standard of 0.09 ppm, the 1999 normalized concentration is 0.142/0.09 = 1.58.

Following is a more in-depth discussion of ambient air quality conditions in the project area.

Ozone

In the presence of ultraviolet radiation, both NO_x and VOC go through a number of complex chemical reactions to form ozone. **AIR QUALITY Table 3** summarizes the best representative ambient ozone data collected from the Rubidoux monitoring station. The table includes the maximum 1-hour and 8-hour ozone levels and the number of days above the State or National standards. Ozone formation is generally higher in spring and summer and lower in the winter. The SCAB is classified as an extreme nonattainment area for both the federal and state 1-hour ozone standards, and a severe nonattainment area for the federal 8-hour ozone standard.

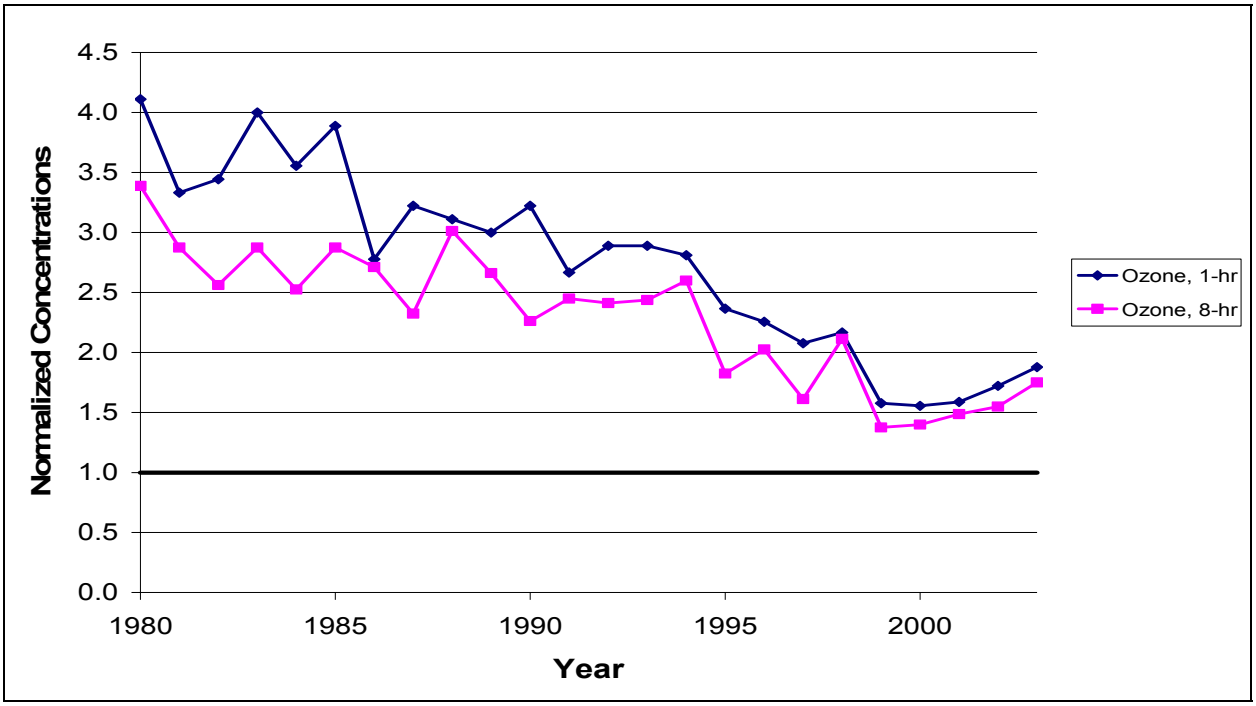
AIR QUALITY Table 3
Ozone Air Quality Summary, 1993-2003 (ppm)

Year	Riverside - Rubidoux					
	Days Above CAAQS 1-Hr	Month of Max. 1-Hr Avg.	Max. 1-Hr Avg.	Days Above NAAQS 8-Hr	Month of Max. 8-Hr Avg.	Max. 8-Hr Avg.
1993	132	SEP	0.260	102	SEP	0.195
1994	134	AUG	0.253	112	AUG	0.208
1995	109	JUL	0.213	78	JUN	0.146
1996	92	MAY	0.203	72	MAY	0.162
1997	89	AUG	0.187	52	MAY	0.129
1998	70	AUG	0.195	57	JUL	0.169
1999	38	JUL	0.142	22	AUG	0.110
2000	42	MAY	0.140	26	MAY	0.112
2001	41	AUG	0.143	33	JUN	0.119
2002	56	SEP	0.155	35	AUG	0.124
2003	80	SEP	0.169	62	AUG	0.140

California Ambient Air Quality Standard (CAAQS): 1-Hr, 0.09 ppm
National Ambient Air Quality Standard (NAAQS): 1-Hr, 0.12 ppm; 8-Hr, 0.08 ppm
Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004.
Source: CARB Air Quality Data CD, December 2002 (1980-2001).

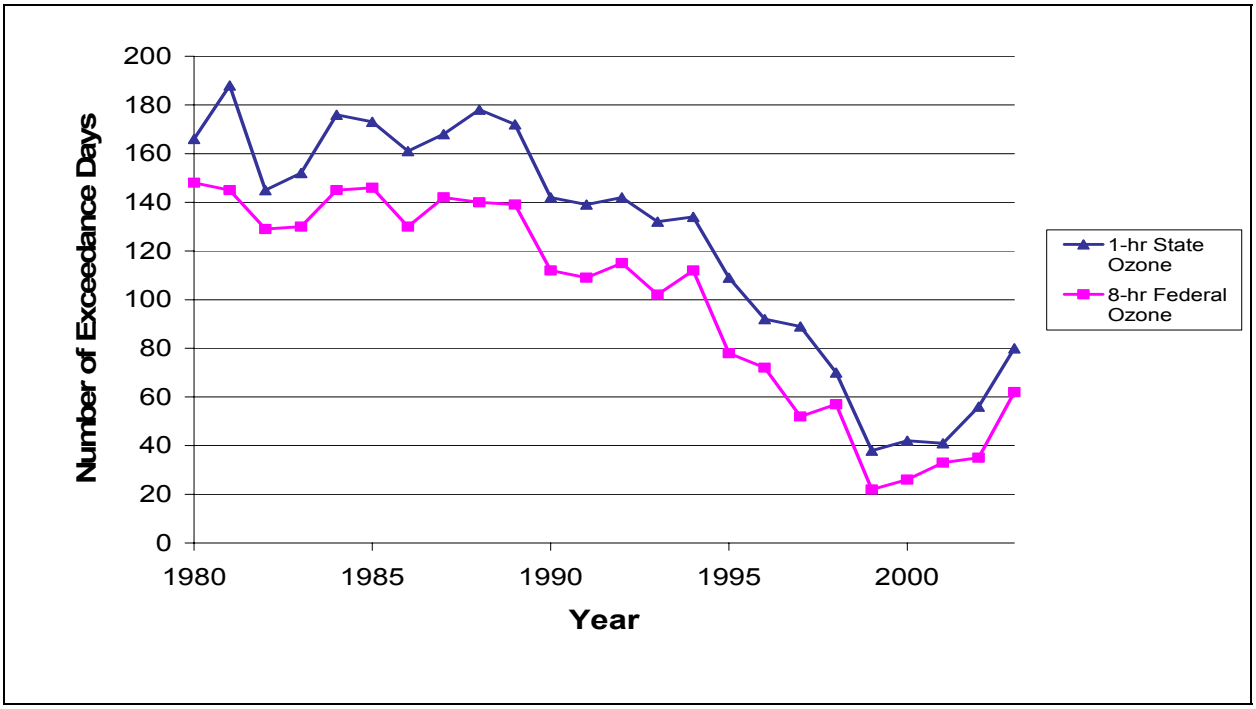
The year 1980 to 2003 trends for the maximum 1-hour and 8-hour ozone concentrations, referenced to the most stringent standard, and the number of days exceeding the California 1-hour standard and the Federal 8-hour standard for the Rubidoux monitoring station are shown in **AIR QUALITY Figure 2** and **Figure 3**, respectively.

AIR QUALITY Figure 2
Normalized Ozone Air Quality Maximum Concentrations
Riverside – Rubidoux



A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. The standard used for 1-hour ozone is the state standard of 0.09 ppm, and for 8-hr ozone is the national standard of 0.08 ppm.

AIR QUALITY Figure 3
Ozone – Number of Days Exceeding the Air Quality Standards
Riverside – Rubidoux



As these two figures show, the maximum 1-hour and 8-hour ozone concentrations and number of exceedances have been decreasing since 1980, but have begun to rise in the last three years (2000-2003).

Inhalable Particulate Matter (PM_{10})

As **AIR QUALITY Table 4** indicates, the project area annually experiences a number of exceedances of the state and federal 24-hour and Annual Arithmetic Mean PM_{10} standards. The SCAB is considered to be in nonattainment of both federal and state PM_{10} standards.

AIR QUALITY Table 4
PM_{10} Air Quality Summary, 1993-2003 ($\mu g/m^3$)

Year	Riverside - Rubidoux			
	Days * Above Daily CAAQS	Month of Max. Daily Avg.	Max. Daily Avg.	Annual Arithmetic Mean
1993	252	SEP	231	72.5
1994	246	JAN	161	65.5
1995	226	APR	219	68.8
1996	252	OCT	162	62.8
1997	257	NOV	163	65.6
1998	181	OCT	116	55.3
1999	261	NOV	153	72.2
2000	248	DEC	139	59.1
2001	240	OCT	136	63.3
2002	251	NOV	130	58.1
2003	N/A	OCT	164	N/A

California Ambient Air Quality Standard: 24-Hr, 50 $\mu g/m^3$; Annual Arithmetic, 20 $\mu g/m^3$
National Ambient Air Quality Standard: 24-Hr, 150 $\mu g/m^3$; Annual Arithmetic, 50 $\mu g/m^3$
Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004.
Source: CARB Air Quality Data CD, December 2002 (1980-2001).
N/A – Not Available
* Days above the state standard (calculated): Because PM_{10} is monitored approximately once every six days, the potential number of exceedance days is estimated.

PM_{10} can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NO_x, SO_x and VOC from turbines, and ammonia from NO_x control equipment, given the right meteorological conditions, can form particulate matters in the form of nitrates (NO_3), sulfates (SO_4), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted but are formed through complex chemical reactions in the atmosphere.

PM nitrate (mainly ammonium nitrate) is formed in the atmosphere from the reaction of nitric acid and ammonia. Nitric acid in turn originates from NO_x emissions from combustion sources. The nitrate ion concentrations during the wintertime are a significant portion of the total PM_{10}, and should be even a higher contributor to particulate matter of less than 2.5 microns ($PM_{2.5}$). The nitrate ion is only a portion of the PM nitrate, which can be in the form of ammonium nitrate (ammonium plus nitrate

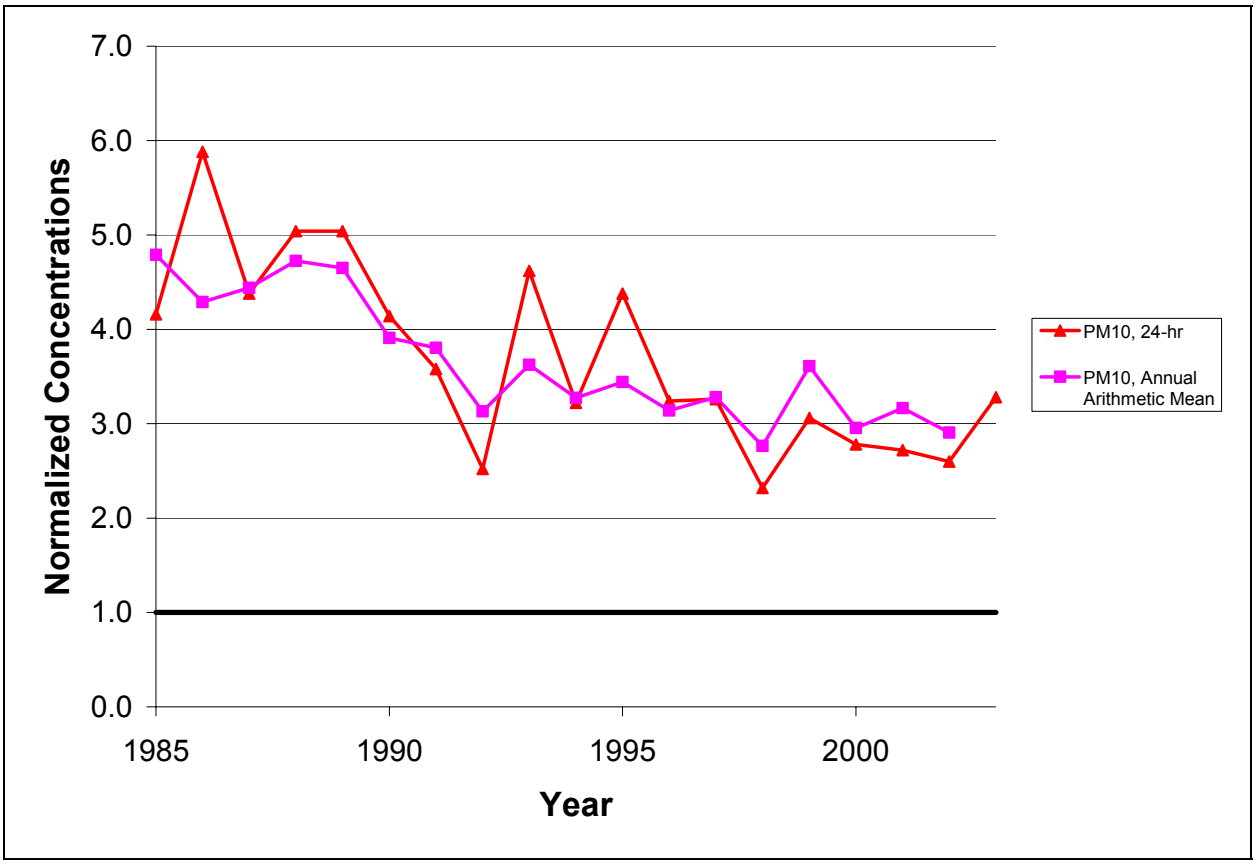
ions) and some as sodium nitrate. If the ammonium and the sodium ions associated with the nitrate ion are taken into consideration, PM nitrate contributions to the total PM would be even more significant.

As shown in **AIR QUALITY Table 4**, the highest PM concentrations are generally measured in the fall and winter. During wintertime high PM episodes, the contribution of ground level releases to ambient PM concentrations is disproportionately high due to low mixing layer heights.

The year 1985 to 2003 trends for the maximum 24-hour PM_{10} and Annual Arithmetic Mean PM_{10}, referenced to the most stringent standard, and the number of days exceeding the California 24-hour PM_{10} standard for the Rubidoux monitoring station are shown in **AIR QUALITY Figure 4** and **Figure 5**, respectively.

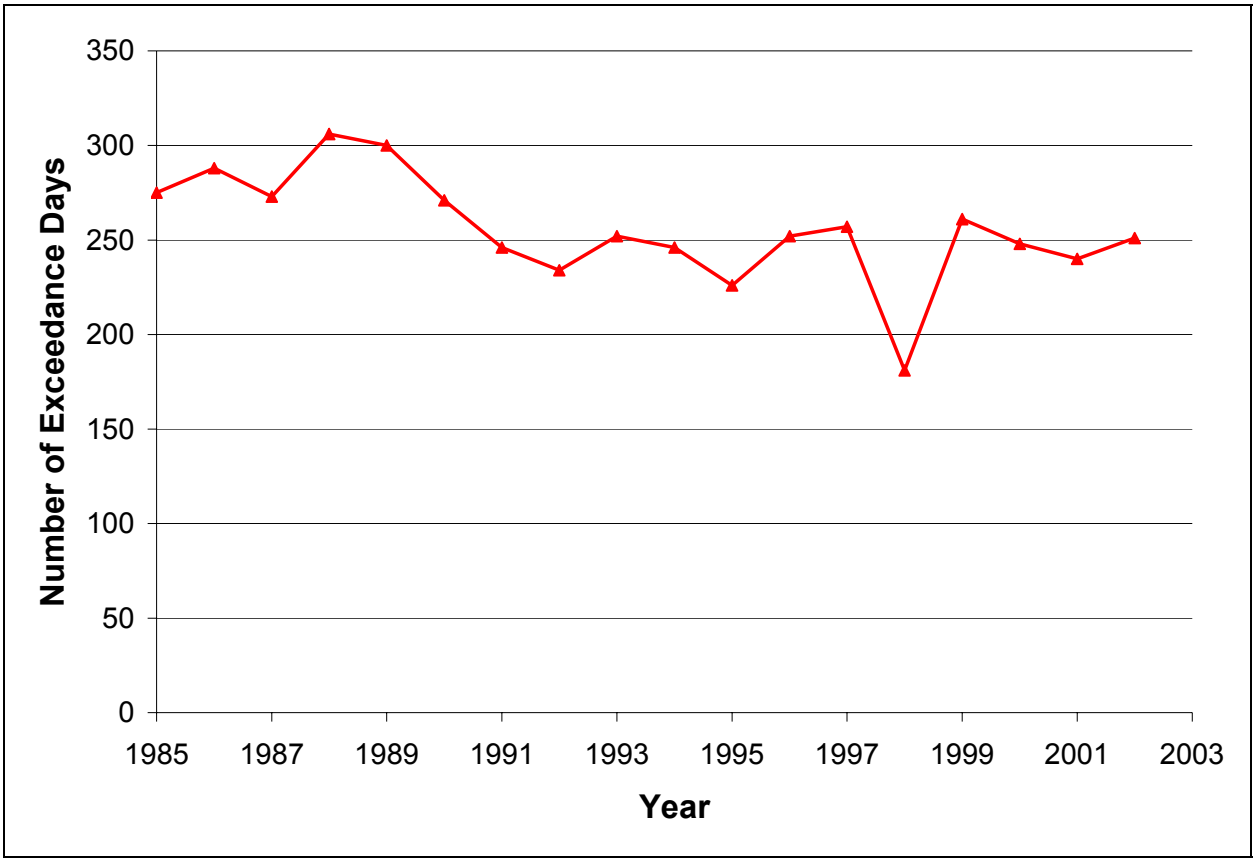
As the two figures show, there is an overall slight gradual (oscillating) downward trend for Annual Arithmetic Mean PM_{10} concentrations and the maximum 24-Hour PM_{10} concentrations. There has also been an overall slight downward trend in the number of exceedances of the California 24-Hour Standard.

AIR QUALITY Figure 4
Normalized PM_{10} Air Quality Maximum Concentrations
Riverside - Rubidoux



A Normalized Concentration is the ratio of the highest measured concentration to the applicable most stringent air quality standard. The standard used for 24-hour PM_{10} is the state standard of 50 $\mu g/m^3$, and for the Annual Arithmetic Mean is the state standard of 20 $\mu g/m^3$.

AIR QUALITY Figure 5
PM_{10} 24-Hour – Number of Days Exceeding the State Air Quality Standard
Riverside – Rubidoux



Inhalable Particulate Matter ($PM_{2.5}$)

While the $PM_{2.5}$ NAAQS were issued in 1997, their implementation has been delayed. States were given until February 15, 2004 to recommend to EPA which areas should be designated as attainment and nonattainment. USEPA plans to finalize $PM_{2.5}$ designations by December 15, 2004 (CARB 2004). States have three years from the time of final designation (December 2007) to provide $PM_{2.5}$ attainment plans in a state implementation plan (SIP). The SCAB has been designated nonattainment for the state $PM_{2.5}$ standard and is proposed to be designated as nonattainment for the federal $PM_{2.5}$ standards.

As **AIR QUALITY Table 5** indicates, the 98th percentile 24-hour average $PM_{2.5}$ concentration levels have been declining from 1999-2002, but continue to remain slightly above the proposed NAAQS of 65 $\mu g/m^3$ in Riverside. The 3-year average of annual arithmetic means (national annual average) has also been declining from 1999-2002, but continues to be above the NAAQS of 15 $\mu g/m^3$ and the CAAQS of 12 $\mu g/m^3$. Attainment for $PM_{2.5}$ will be based on the entire SCAB, which has been recommended as a nonattainment area for $PM_{2.5}$.

AIR QUALITY Table 5
$PM_{2.5}$ Air Quality Summary, 1999-2002 ($\mu g/m^3$)

Year	Riverside - Rubidoux					
	Max. Daily Avg.	98th Percentile of Max. Daily Avg.	Days * Above 98th Percentile Daily NAAQS	3-Yr. Avg. 98th Percentile of Max. Daily Avg.	National Annual Avg.	3-Yr. Avg. of National Annual Avg.
1999	111.2	111.2	54	N/A	31.0	N/A
2000	119.6	77.1	66	N/A	28.3	N/A
2001	98.0	74.3	102	77	31.0	30
2002	77.6	66.3	48	73	27.4	28
	Riverside – Magnolia Street					
1999	89.9	61.6	12	N/A	26.7	N/A
2000	79.3	66.8	30	N/A	25.3	N/A
2001	74.9	65.8	24	65	28.2	26
2002	75.5	63.7	12	65	27.1	26

California Ambient Air Quality Standard: Annual Arithmetic Mean, 12 $\mu g/m^3$
National Ambient Air Quality Standard: 3-Year Average - 98th Percentile of 24-Hr Avg. Conc., 65 $\mu g/m^3$;
3-Year Average of Annual Arithmetic Mean (National Annual Average), 15 $\mu g/m^3$
Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004.
Source: CARB Air Quality Data CD, December 2002 (1980-2001).
N/A – Not Available
* Days above the national standard (calculated): Because $PM_{2.5}$ is monitored approximately once every six days, the potential number of exceedance days is calculated by multiplying the actual number of days of exceedances by six.

Southern California Particulate Center & Supersite Particulate Studies

The Southern California Particulate Center & Supersite (SCPCS), a research center primarily funded by USEPA and CARB, is in the process of conducting particulate measurements throughout Southern California including Riverside. The SCPCS is conducting research on the sources, quantities and health effects of particulate emissions. The particulate sampling progress reports and other SCPCS publications can be found on the following website: http://www.ph.ucla.edu/scpcs/publications.html. The limited monthly particulate sampling data summarized in the Year 4 Progress Report (SCPCS 2003) indicate that Riverside (in comparison to the other four sites sampled: Downey, Rubidoux, Claremont, and the Campus at USC) at the time of sampling[1] showed months with higher total fine (<10 μm) particulate mass, higher "coarse" (2.5 μm to 10 μm) fine particulate mass, higher "accumulation" (0.18 μm to 2.5 μm) fine particulate mass than the other sampling performed; but showed lower ultrafine (<0.18 μm) particulate mass than the maximum monthly results from all of the other locations. The results show that Riverside had, as would be expected due to local agricultural ammonia emissions, higher secondary particulate (ammonium nitrate and ammonium sulfate) mass than the other locations sampled. The overall results confirm that the Riverside area, as also shown in the ambient PM_{10} and $PM_{2.5}$ data tables and figures, has high ambient particulate concentrations that need to be seriously considered in this environmental analysis.

[1] It should be noted that the sampling results given in this study are sequential, so no two sites have sampling data for the same period. This means that comparing results is difficult and may provide erroneous assumptions.

Carbon Monoxide (CO)

As **AIR QUALITY Table 6** shows, the maximum one-hour and eight-hour CO concentrations in the project area are less than the California Ambient Air Quality Standards. CO is considered a local pollutant as it is generally only found in high concentrations near a large source of emissions. Automobiles and other mobile sources are the principal source of the CO emissions. High levels of CO emissions can also be generated from fireplaces and wood-burning stoves. At the Magnolia Street air monitoring station, there have been no recorded exceedances of CAAQS or NAAQS since at least 1980 for the one-hour CO standards and 1989 for the eight-hour CO standards. At the Rubidoux air monitoring station, there have been no recorded exceedances of CAAQS or NAAQS since at least 1980 for the one-hour CO standards and 1990 for the eight-hour CO standards.

The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the wintertime late in the afternoon, persist during the night and may extend one or two hours after sunrise. Since mobile sources (motor vehicles) are the main cause of CO, ambient concentrations of CO are highly dependent on motor vehicle activity. In fact, the peak CO concentrations occur during the rush hour traffic in the morning and afternoon. Carbon monoxide concentrations in Riverside County and the rest of the state have declined significantly due to two state-wide programs: 1) the 1992 wintertime oxygenated gasoline program and; 2) Phases I and II of the reformulated gasoline program. New vehicles with oxygen sensors and fuel injection systems have also contributed to the decline in CO levels in the state.

AIR QUALITY Table 6
CO Air Quality Summary, 1993-2003 (ppm)

Year	Riverside – Magnolia Street			Riverside - Rubidoux		
	Maximum 1-Hr Average	Month of Max. 8-Hr Average	Maximum 8-Hr Average	Maximum 1-Hr Average	Month of Max. 8-Hr Average	Maximum 8-Hr Average
1993	10.0	DEC	6.25	8.0	DEC	7.13
1994	11.0	JAN	7.25	7.8	JAN	5.76
1995	9.0	NOV	6.31	6.8	DEC	5.69
1996	9.1	DEC	5.31	8.5	JAN	5.07
1997	10.7	NOV	5.48	6.6	NOV	5.58
1998	6.4	JAN	4.57	5.5	DEC	4.78
1999	7.4	JAN	4.10	7.0	JAN	4.43
2000	8.8	JAN	4.23	5.3	DEC	4.15
2001	5.8	JAN	4.48	5.2	NOV	3.49
2002	7	JAN	3.75	8	DEC	3.09
2003	N/A	OCT	3.33	N/A	OCT	3.67

California Ambient Air Quality Standard: 1-Hr, 20 ppm; 8-Hr, 9 ppm
National Ambient Air Quality Standard: 1-Hr, 35 ppm; 8-Hr, 9 ppm
Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004.
Source: CARB Air Quality Data CD, December 2002 (1980-2001).
Source: SCAQMD 2004. 2002 Air Quality Data Table (1-Hr Average only).
N/A – Not Available

Nitrogen Dioxide (NO_2)

As shown in **AIR QUALITY Table 7** the maximum one-hour and annual concentrations of NO_2 at the Rubidoux air monitoring station are below the California and National Ambient Air Quality Standards. Approximately 75 to 90 percent of the NO_x emitted from combustion sources is NO, while the balance is NO_2. NO is oxidized in the atmosphere to NO_2 but some level of photochemical activity is needed for this conversion. This is why the highest concentrations of NO_2 occur during the fall and winter when atmospheric conditions favor the trapping of ground level releases but lack significant photochemical activity (less sunlight). In the summer the conversion rates of NO to NO_2 are high but the relatively high temperatures and windy conditions (atmospheric unstable conditions) disperse pollutants, preventing the accumulation of NO_2 to levels approaching the 1-hour ambient air quality standard. The formation of NO_2 in the summer in the presence of ozone is according to the following reaction.

$$\mathbf{NO + O_3 \rightarrow NO_2 + O_2}$$

In urban areas, ozone concentration levels are typically high. These levels will drop substantially at night as the above reaction takes place between ozone and NO. This reaction explains why, in urban areas, ozone concentrations at ground level drop, while aloft and in downwind rural areas (without sources of fresh NO_x emissions) ozone concentrations can remain relatively high.

AIR QUALITY Table 7
NO_2 Air Quality Summary, 1993-2003 (ppm)

Year	Riverside - Rubidoux		
	Month of Max. 1-Hr Average	Maximum 1-Hr Average	Maximum Annual Average
1993	DEC	0.140	0.030
1994	JAN	0.181	0.031
1995	NOV	0.147	0.030
1996	NOV	0.110	0.029
1997	OCT	0.122	0.026
1998	DEC	0.099	0.022
1999	NOV	0.132	0.025
2000	DEC	0.094	0.022
2001	MAR	0.150	0.024
2002	NOV	0.098	0.023
2003	OCT	0.099	0.021
California 1-Hr Ambient Air Quality Standard: 0.25 ppm National Annual Ambient Air Quality Standard: 0.053 ppm Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004. Source: CARB Air Quality Data CD, December 2002 (1980-2001).			

Sulfur Dioxide (SO_2)

Sulfur dioxide is typically emitted as a result of the combustion of a fuel containing sulfur. Fuels such as natural gas contain very little sulfur and consequently have very low SO_2 emissions when combusted. By contrast fuels high in sulfur content such as heavy fuel oils or coal emit very large amounts of SO_2 when combusted.

Sources of SO_2 emissions within the SCAB come from every economic sector and include a wide variety of fuels; gaseous, liquid and solid. The SCAB is designated attainment for all the SO_2 state and federal ambient air quality standards. **AIR QUALITY Table 8** shows the historic 1-hour, 24-hour and annual average SO_2 concentrations collected from the Rubidoux air monitoring station, approximately four miles northeast of the project site. As **AIR QUALITY Table 8** shows, concentrations of SO_2 are far below the state and federal SO_2 ambient air quality standards.

AIR QUALITY Table 8
SO_2 Air Quality Summary, 1993-2003 (ppm)

Year	Riverside - Rubidoux			
	Maximum 1-Hr Avg.	Month of Max. 24-Hr Avg.	Maximum 24-Hr Avg.	Annual Average
1993	0.020	APR	0.0126	0.0009
1994	0.017	JAN	0.0047	0.0011
1995	0.012	DEC	0.0047	0.0009
1996	0.010	JAN	0.0047	0.0008
1997	0.036	NOV	0.0048	0.0013
1998	0.031	NOV	0.0090	0.0014
1999	0.034	FEB	0.0115	0.0015
2000	0.107	MAR	0.0384	0.0011
2001	0.019	AUG	0.0087	0.0009
2002	0.02	FEB	0.003	N/A
2003	N/A	JUL	0.012	0.002

California Ambient Air Quality Standard: 1-Hr, 0.25 ppm; 24-Hr, 0.04 ppm
National Ambient Air Quality Standard: 24-Hr, 0.14 ppm; Annual, 0.030 ppm
Source: CARB web site, http://www.arb.ca.gov/adam/, Accessed May 2004.
Source: CARB Air Quality Data CD, December 2002 (1980-2001).
Source: SCAQMD 2004. 2002 Air Quality Data Table (1-Hr Average only).
N/A – Not Available

Visibility

The conditions of visibility in the region of the project site are dependent upon the relative humidity natural to the area and the intensity of both particulate and gaseous pollution in the atmosphere. The most straightforward characterization of visibility is probably the visual range (the greatest distance that a large dark object can be seen off in the horizon). However, in order to characterize visibility over a range of distances, it is more common to analyze the changes in visibility in terms of the change in light-extinction that occurs over each additional kilometer of distance (1/km). In the case of a greater light-extinction, the visual range will decrease.

The SCAB is currently designated as unclassified for visibility reducing particles.

Summary

In summary, staff recommends the background ambient air concentrations in **AIR QUALITY Table 9** for the modeling and impacts analysis. The maximum criteria pollutant concentration from the past three years (2000-2002) from the following

representative monitoring stations are used to determine the background values: Magnolia Street and Rubidoux.

The project site is located within the City of Riverside, in a light industrial/manufacturing area, adjacent to the City's wastewater treatment plant. Where possible, the recommended background concentrations come from nearby monitoring stations with similar characteristics. The recommended ozone, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ background concentrations are from the Rubidoux air monitoring station. The recommended CO background concentration is from the Magnolia Street air monitoring station.

AIR QUALITY Table 9
Staff Recommended Background Concentrations for RERC (ppm)

Pollutant	Averaging Time	2001	2002	2003	Most Restrictive Ambient Air Quality Standard
Ozone	1 hour	0.143	0.155	**0.169**	0.09
	8 hour	0.119	0.124	**0.140**	0.08
PM_{10} ($\mu g/m^3$)	24 hours	136	130	**164**	50
	Annual Arithmetic Mean	**63.3**	58.1	N/A	20
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	**119.6**	98.0	77.6	65
	Annual Arithmetic Mean	28.3	**31.0**	27.4	12
NO_2	1 hour	**0.150**	0.098	0.099	0.25
	Annual	**0.024**	0.023	0.021	0.053
CO	1 hour	5.8	**8**	N/A	20
	8 hour	**4.48**	3.75	3.33	9
SO_2	1 hour	0.019	**0.02**	N/A	0.25
	3 hour [b]	0.017	**0.018**	N/A	0.5
	24 hours	0.0087	0.003	**0.012**	0.04
	Annual	0.0009	N/A	**0.002**	0.03

Notes:
N/A – Not Available
a. Bold values are the background concentrations used throughout the following air quality analysis.
b. 3-hour SO_2 value is assumed to equal 90% of 1-hour SO_2 value.

PROJECT DESCRIPTION

This section describes the project design and criteria pollutant control devices as described in the SPPE application (RERC 2004a,d).

PROPOSED EQUIPMENT

The major equipment proposed in the application includes the following (RERC 2003a,d):

- Two General Electric (GE) LM 6000 SPRINT NxGen combustion turbine generators (CTGs) with SPRINT Power Boost System, each rated at 48 MW (nominal at annual average site temperature of 72.2°F). Each CTG would be equipped with demineralized water injection and inlet air chilling (described below).
- A continuous emission monitoring (CEM) system for NO_x, CO, and oxygen.

- One common chiller package, which include a 3,200-ton electric chiller, dual-chilled water pumps, dual condenser water pumps, 3-cell pre-fabricated, pre-engineered cooling tower, motor control center, and chiller controls.
- Three electrically driven reciprocating natural gas compressors with nominal capacity of 12 MSCFD, 725 psig, and 573 HP each.
- Zero Liquid Discharge (ZLD) system.
- 12,000 gallon aqueous ammonia storage tank (19% aqueous ammonia).

FACILITY OPERATION

Riverside Public Utilities (RPU) has proposed to develop, build, own and operate a simple-cycle power plant, referred to as the Riverside Energy Resource Center (RERC), within a 12-acre parcel located in a light industrial/manufacturing area of the City of Riverside in Riverside County, California. The project site is located adjacent to the City of Riverside's Wastewater Treatment Plant (WWTP), which includes a 3.3 MW cogeneration facility that will be the source of power to black start the RERC plant. The two facilities would be cross-tied for both electrical power and compressed air. The RERC will be located approximately 9,000 feet (1.7 miles) from the RPU's existing Mountain View substation, near the intersection of Sheppard Street and Jurupa Avenue. The power plant site, including administration building and warehouse, would occupy approximately 8 of the 12 acres with the additional 4 acres reserved for equipment storage and construction parking.

The RERC would use two stationary, natural gas-fired combustion turbines for power production. Each CTG would have water injection to minimize NO_x emissions. The CTGs would also be equipped with one common packaged chilled water system to maximize CTG performance during periods of high ambient temperatures. A selective catalytic reduction (SCR) emission control system in the exhaust duct, using 19 percent aqueous ammonia in the presence of catalyst, would also be used to reduce the NO_x concentration in the exhaust gases. An oxidation (CO) catalyst would be installed to control carbon monoxide (CO) emissions and reduce VOC emissions.

Each combustion turbine generator (CTG) would generate an average of 48 MW at base load under average ambient conditions (72.2°F May to October). The plant would be capable of operating with one or both CTGs operating. The CTGs would be able to deliver peak power at 100 percent output. Under peaking load operation, the CTGs could operate 14 hours per day, five days a week. However, the plant design will also permit operation 24 hours a day, seven days a week (base load operation). The plant shall be capable of at least three starts/stops per day, with a maximum of one start/stop per hour per turbine. The plant would be permitted for 2,660 hours of operation in total from both units, or may be permitted to an equivalent emission limit.

The RERC design includes a common CTG inlet air water chiller with associated packaged cooling tower. The chiller cooling tower would have 3-cells and use reclaimed water from the City's WWTP. The cooling tower blowdown would be routed to the ZLD system.

EMISSION CONTROLS

The exclusive use of pipeline-quality natural gas, a relatively clean-burning fuel, would limit the formation of VOC, PM_{10}, and SO_2 emissions. Natural gas contains very little noncombustible gas or solid residues and a small amount of reduced sulfur compounds including mercaptan. There would be no distillate fuel oil firing at RERC.

The CTGs will use water injection technology to minimize NO_x emissions from the CTG exhaust. Selective catalytic reduction (SCR) systems in the exhaust ductwork will use 19 percent aqueous ammonia to further reduce NO_x emissions to 2.5 parts per million by volume, dry (ppmvd) at 15 percent oxygen (O_2) at full load on a one-hour average basis (excluding startups). Ammonia slip would be limited to 5 ppmvd at 15 percent O_2 from the gas turbines. Carbon monoxide (CO) would be controlled upstream of the SCR system by an oxidation catalyst, and would be limited to 6 ppmvd at 15 percent O_2 (1-hour average). VOC emissions leaving the stacks would be limited to 2.0 ppmvd at 15 percent O_2 (1-hour average) with the use of the oxidation catalyst. Particulate emissions would be controlled using inlet air filtration (inlet scrubbers and a common outlet coalescing filter) and natural gas as the sole fuel for the CTGs.

Two 80-foot-tall, exhaust stacks would release the CTG exhaust gas into the atmosphere. Continuous emission monitors (CEMs) would be installed on each of these stacks to monitor NO_x, CO, and oxygen concentrations to assure adherence with the proposed emission limits. The system would also be used to predict ammonia slip emissions. Stack flow rates would be calculated based upon measured fuel consumption rates and would be used to determine hourly mass emissions in accordance with SCAQMD and U.S. EPA regulations. The CEM system would generate reports of emissions data in accordance with permit requirements and send alarm signals to the plant's control room when the level of emissions approaches or exceeds specified limits.

Emissions from the cooling towers are estimated based on the estimated maximum cooling water Total Dissolved Solid (TDS) level of 153 ppm. This is based on the revised description of the operation of the cooling tower, which is assumed to take raw cooling tower intake water that has been demineralized from 650 ppm TDS to 10.2 ppm with the cooling tower operating at 15 cycles of concentration (SCEC 2004b). The cooling towers are exempt from SCAQMD permitting and are noted to have a controlled drift emission rate of 0.001% of the recirculating water flow (RERC 2004d, Appendix 6.1-B).

The proposed ZLD system will be designed in a manner that would not have any significant additional operating air pollutant emissions. The handling of the filtercake produced by the ZLD system would result in minimal additional PM_{10} emissions, and depending on the final design of the ZLD system (i.e. if there is no filterpress) the PM_{10} emissions could essentially be zero. An estimate of the worst-case ZLD system design filtercake handling emissions has been provided by the applicant (SCEC 2004b). The worst-case assumptions include that the filtercake has a 10% moisture content and that it has uncontrolled loading/handling emissions from the filterpress to the shipping container, which will be covered when transported.

ESTIMATED PROJECT EMISSIONS

The proposed project will generate air emissions during the construction, operation, and commissioning of the facility. The following is a summary of the air emissions from these sources.

Criteria Pollutants Generated From Construction Activities

The RERC will include two 48 MW natural gas-fired, simple-cycle turbine generators, a ZLD system, a common packaged chilled water systems, three reciprocating natural gas compressors, and the following linear and ancillary facilities:

- Approximately 1.75 miles of double-circuit 69-kV subtransmission line to RPU's existing Mountain View Substation.
- Approximately 140 feet natural gas service line would be constructed to connect from the Sempra transmission pipeline that passes next to the northeast corner of the project site to the on-site meter station.
- Reclaimed water supply interconnection line from the adjacent WWTP.
- Potable water (from the City of Riverside general water supply), and fire water (from the City of Riverside potable water system) supply interconnection lines. Proposed connection points for these lines would be in Acorn Avenue, approximately 60 feet from the southwest corner of the project site.
- On-site substation.

Construction activities for the RERC project, both on-site and off-site, would generate air emissions from earth moving activities and construction equipment. Construction is expected to last approximately 9 months, following approval, once all permits and authorizations are in place. Commencement of construction is anticipated to occur in October 2004, with commercial operation of the first unit in May 2005 and the second unit in July 2005. Off-site construction of the subtransmission line interconnect is expected to commence in January 2005 and would be completed in 55 working days.

Project Site

The power plant project construction consists of five main phases: 1) site preparation, 2) foundation work, 3) installation of major equipment, 4) construction/installation of major structures, and 5) startup and commissioning. Fugitive dust emissions during the construction of the project result from dust entrained during site preparation and grading/excavation at the construction site, during on-site travel on paved and unpaved surfaces, and during aggregate and soil loading and unloading operations, as well as, wind erosion of areas disturbed during construction activities. The largest fugitive dust emissions are generated during site preparation activities, where work such as clearing, grading, excavation of footings and foundations, and backfilling operations occur. These types of activities require the use of large earth moving equipment, which generate combustion emissions, along with creating fugitive dust emissions. Combustion emissions during the construction of the project result from exhaust sources including diesel construction equipment used for site preparation, water trucks used to control dust emissions, cranes, diesel-powered welding machines, electric

generators, air compressors, water pumps, diesel trucks used for deliveries, and automobiles and trucks used by workers to commute to and from the construction site.

Applicant estimates for the highest emissions during construction are based on the first full month of construction (November 2004), during which both site preparation and foundation work would occur, and are provided in **AIR QUALITY Table 10**. Annual on-site construction heavy equipment exhaust and fugitive dust emissions based on the average equipment mix during the 9-month construction period are summarized in **AIR QUALITY Table 11**. These emission estimates have been revised since the publication of the DIS by the applicant (SCEC 2004b) to address comments from the intervenor California Unions for Reliable Energy (CURE) (CURE 2004a, 2004b, 2004c, 2004d) and CEC staff (CEC 2004).

AIR QUALITY Table 10
Maximum Daily Emissions During On-Site Construction
November 2004, lbs/day

	NO_x	CO	VOC	SO_x	PM_{10}
On-Site					
Construction Equipment [a]	108.75	45.57	7.39	0.11 [a]	5.03
Unpaved Road Travel	---	---	---	---	18.13
Grading/Bulldozing	---	---	---	---	26.31
Earth Loading	---	---	---	---	2.04
Disturbed Soil Wind Erosion	---	---	---	---	0.05
Granite Blasting	---	---	---	---	0.00
Off-site					
Worker Travel – Combustion Emissions [b]	6.48	58.90	6.19	0.04	0.027
Truck Deliveries – Combustion Emissions [b]	14.22	2.10	0.44	0.14	0.28
Worker Travel – Paved Road Dust	---	---	---	---	7.69
Truck Deliveries – Paved Road Dust	---	---	---	---	38.85
Total Emissions	129.45	106.56	14.02	0.028	98.64

From SCEC 2004b
Notes:
a. Heavy diesel construction equipment emission factors are based on the EPA Nonroad model engine emission factors (USEPA 2002) and use of CARB ultra low-sulfur fuel (15 ppm sulfur).
b. PM_{10} emissions include tire and brake wear.

AIR QUALITY Table 11
Annual Emissions During On-Site Construction, lbs/project

	NO_x	CO	VOC	SO_x	PM_{10}
On-Site					
Construction Equipment	7,268	4,634	785	8	494
Unpaved Road Travel	---	---	---	---	2,065
Grading/Bulldozing	---	---	---	---	785
Earth Loading	---	---	---	---	92
Disturbed Soil Wind Erosion	---	---	---	---	7
Granite Blasting	---	---	---	---	0.24
Off-site					
Worker Travel – Combustion Emissions	748	6,802	715	4	31
Truck Deliveries – Combustion Emissions	2,190	323	67	22	43
Worker Travel – Paved Road Dust	---	---	---	---	1,184
Truck Deliveries – Paved Road Dust	---	---	---	---	5,983
Total Emissions, lbs/project	10,206	11,759	1,567	34	10,684
Total Emissions, tons/project	5.10	5.88	0.78	0.017	5.34

From SCEC 2004b (SO_x and PM_{10} emissions were revised, as the tables in the SPPE text reversed the values between off-site combustion emissions by passenger vehicles and delivery trucks).

Linear Facilities

The linear facilities would include the 69-kV subtransmission line. Construction of the subtransmission line interconnect is expected to commence in January 2005 and would be completed in 55 working days.

The RERC would be looped into the existing 69-kv transmission line that connects the Mountain View and Riverside substations, approximately 400 feet outside the Mountain View Substation. From the intercept point, a new double-circuit 69-kV subtransmission line would extend approximately 1.75 mile to the RERC facility. The subtransmission line would exit the RERC facility, travel south along the east side of Payton Avenue for approximately 1,200 feet, turn east at Jurupa Avenue and follow along the south side of Jurupa Avenue for approximately 7,000 feet to Sheppard Street, where it would turn southeast and run along the southwest side of Sheppard Street for approximately 800 feet until reaching the Mountain View Substation. Existing communications circuits (cable and phone) would be transferred to the new poles, and the City would extend its fiber optic loop from the Mountain View Substation to the RERC facility, thereby adding a fiber optic communications circuit to the new line. The proposed subtransmission line alignment would require the installation of approximately 55 new poles (approximately one installed per work day).

AIR QUALITY Table 12 shows maximum daily emissions expected from the construction of the subtransmission line interconnect.

AIR QUALITY Table 12
Maximum Daily Emissions During Subtransmission Line Interconnect Construction, February 2005, lbs/day

	NO_x	CO	VOC	SO_x	PM_{10}
On-Site					
Construction Equipment	15.23	11.88	1.78	0.02	0.863
Unpaved Road Travel	---	---	---	---	0.001
Grading/Bulldozing	---	---	---	---	0.215
Earth Loading	---	---	---	---	0.050
Disturbed Soil Wind Erosion	---	---	---	---	0.017
Off-site					
Truck Deliveries – Paved Road Dust	---	---	---	---	0.661
Total Emissions	15.23	11.88	1.78	0.02	1.81

From SCEC 2004b.

Construction Emission Estimate Methodology

The California Unions for Reliable Energy (CURE), an intervenor in this case, has identified potential issues with the emission estimate methodologies and assumptions used by the applicant (CURE 2004a, 2004c, 2004d). These issues, which CURE contends cause the construction emissions to be underestimated, include:

1. Silt content assumptions used in the fugitive dust equations
2. Watering control efficiency
3. Paved roads silt loading
4. Engineered fill inclusion in calculations

5. Offroad equipment fuel use/size assumptions
6. Offsite onroad travel emission calculations
7. Construction schedule
8. Rock crushing

Staff has reviewed these comments; performed an additional analysis of the construction emission methods, assumptions, and calculations; and provided suggestions to improve the construction emission estimates to the applicant (CEC 2004). The applicant reviewed the comments from CURE and the suggestions from CEC staff and made the following revisions to the construction emission estimate methods, assumptions, and calculations:

1. Silt Content

   The silt content was revised by the applicant to 13.2% to conform to the average of the soil sieve results contained in the geotechnical investigation (LOR 2004a). These sieve results are confined to four surface soil samples; there were no sieve analyses performed for the lower bedrock and courser grained subsurface layers. It is clear from the bore logs in the geotechnical investigation and the additional subsurface analysis (LOR 2004b) that the surface soils are finer grained on average than lower soil/rock layers. Therefore, staff considers an assumed silt content of 13.2% to be a very conservative estimate of the average silt content for the subsurface materials that will be worked at the site.

   CURE contends that the silt content should be based on the bore logs from the additional subsurface analysis (LOR 2004b) performed for the site. This contention is incorrect. The silt content as it is defined for use in the various fugitive dust emission factor equations is based on a physical analysis of the soil. Simply stated, it is the fraction of the soil that passes through a standard 200 mesh sieve. This definition is clearly identified in EPA AP-42 Appendix C.2 (USEPA 1993). The bore logs used by CURE to determine a silt percentage actually provide a visual description and estimate of the percentage of various soil types encountered and are completely inappropriate for the determination of the USEPA defined silt content.

2. Watering Control Efficiency

   The applicant revised the watering control efficiency, for those fugitive dust calculations that do not use an assumed moisture content, from 90% to 85%. This efficiency is on the high end of the scale recommended for use in the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). Staff believes that using the high end of the scale for the fugitive dust control efficiency is reasonable due to the conservative assumptions, such as the soil silt content, being used in the fugitive dust emission calculations and due to the project being required to have an on-site air quality construction mitigation manager, who will be responsible to ensure that the watering frequency is adequate to maintain maximum feasible fugitive dust control.

3. Paved Roads Silt Loading

   The applicant revised the paved roads silt loading as recommended by CURE, which reduces the estimated paved road fugitive dust emissions.

4. Engineered Fill

   The engineered fill emissions are included in the dirt loading/piling emissions estimated by the applicant, which assumes that 120,000 lbs of material loading/piling occur daily and that there are an equivalent of 45 days of this level of dirt loading/piling during the construction project (SCEC 2004b). Additionally, the applicant has stated that the engineered fill material will be a very coarse material (3/4 inch to 1-1/2 inch diameter) and that it will be watered as it is unloaded (SCEC 2004b). Therefore, the fine particulate emissions from the engineered fill are included in the emission estimates and are also probably overestimated since the coarse nature of the fill has not been factored into the emission estimate. CURE is incorrect to assume that this emission calculation does not include drop emissions (CURE 2004c, page 7) and is incorrect in assuming that the drop emissions for this engineered coarse fill material would be significant.

5. Offroad Equipment Assumptions

   The applicant has revised the horsepower size and daily use of the assumed offroad equipment required for construction. These revisions include, but are not limited to, revising the size of the dozer, loader, and excavator to larger models, and now assuming that the water truck would be active for all hours during the construction schedule. Staff believes that these revisions adequately address CURE's concerns and provide for a conservative emission estimation basis for the equipment types that would be used during the site construction.

6. Onroad Emission Calculations

   The applicant incorporated the revisions to the onroad emission calculations suggested by CURE.

7. Construction Schedule

   The applicant's construction emission calculations are based on an eight-hour construction day. Increases in the construction schedule are assumed to linearly increase the construction emissions. This issue is detailed further in the construction emission modeling impact discussion.

8. Rock Crushing

   The applicant's construction emission calculations have been updated to include emissions from breaking up three large rock formations with small explosive charges.

Staff has reviewed the revised construction emission estimate and believes that the revisions are reasonable and, considering the recommended mitigation measures, will result in a conservative estimate of the construction emission potential.

Criteria Pollutants Generated From Project Operation

Air emissions would be generated from operating the major project components. The emission rates for the combustion gas turbines and cooling towers are provided in **AIR QUALITY Table 13.**

AIR QUALITY Table 13
Maximum Pollutant Emission Rates
During Normal Operation, lb/hr

Pollutant	Each Gas Turbine [a]	3-Cell Cooling Tower	ZLD Filtercake Handling
NO_x	4.49	---	---
CO	6.89	---	---
VOC	0.94	---	---
SO_2	0.28 [b]	---	---
PM_{10}	3.00	0.0043	0.0037
NH_3	3.32	---	---

From RERC 2004d, Table 6.1-21 (MHC - Maximum Hourly Controlled), RPU 2004c (DR #5), and SCEC 2004b, updated cooling tower total (3-cells) and ZLD filtercake handling hourly emissions rate.
Notes:
a. Emissions reflect full utilization of SCR and CO oxidation systems. For NOx, CO, and VOC, values exclude startups, shutdowns, and commissioning.
b. The applicant's SO_2 emission estimate has been lowered based on SCAQMD's standard natural gas SO_2 emission factor (0.60 lbs SO_2/MMcuft natural gas).

Air Quality Table 14
Criteria Pollutant Emission Rates
During Startup, Shutdown, and Maintenance per Turbine

Pollutant	Startup [a] Maximum, lb/hr	Shutdown [b] Maximum, lb/hr	Maintenance [c] Maximum, lb/hr
NO_x	16.47	6.60	44.93
CO	13.20	11.18	45.93
VOC	1.02	1.02	1.88
SO_2 [d]	0.26	0.28	0.28
PM_{10}	2.74	3.00	3.00
NH_3	2.02	3.32	N/A

From RERC 2004d, Tables 6.1-19 and 6.1-20 (MHC - Maximum Hourly Controlled); Table 6.1-21 (MHU - Maximum Hourly Uncontrolled); Appendix 6.1-B, Startup Emissions Worksheet.
N/A – Not Applicable.
Notes:
a. Hourly startup emissions reflect a 10-minute process during which fuel consumption and power output rise to 100 percent of rated capacity. Full load is achieved at the tenth minute. Overall NOx emissions are estimated by the turbine vendor to be 2.5 lbs during first 10-minutes of operation. Additional 30-minute period is assumed, during which SCR and CO oxidation systems become fully effective. Ammonia emissions estimated based on NO_x emissions of 12.36 lb/hr (at a concentration of 25 ppmvd @ 15% O_2 (30 minutes of startup cycle), 1.50 lb/hr at a concentration of 2.5 ppmvd @ 15% O_2 (last 20-minutes with fully effective SCR) and ammonia slip of 5 ppm.
b. Hourly shutdown emissions reflect 52 minutes of normal operations followed by 8 minutes for the shutdown process.
c. Maintenance emissions represent full load conditions without any emission control, and reflect non-upset major maintenance work or other activities that may require the turbines to run temporarily without the SCR or oxidation catalyst in place and/or working properly (SCEC 2004a). As an example, after a major turbine overhaul or replacement there may be a need for turbine commissioning activities that need to be performed without the catalyst systems in place. The applicant is proposing this emission profile category, with the expectation that there would be very stringent and specific conditions controlling what can be considered maintenance hours and that there use would generally be much less than 20 hour per year, to reduce the need for future variance procedures. SCAQMD may or may not allow maintenance hour emissions in the permit for this facility, but for the purposes of this analysis the potential for maintenance hour emissions is included so that their worst-case potential impact can be assessed.
d. The applicant's SO_2 emission estimate has been lowered based on SCAQMD's standard natural gas SO_2 emission factor (0.60 lbs SO_2/MMcuft natural gas).

Expected event emission rates during startup, shutdown, and turbine maintenance are summarized in **AIR QUALITY Table 14**. It should be noted that only one startup per turbine would occur in a given hour, although both turbines could be started in the same hour (RERC 2004c, DR #16).

AIR QUALITY Table 15 summarizes the maximum (worst-case) estimated hourly levels of the different criteria pollutants from the turbine and cooling tower. To assess worst-case hourly emissions, the following assumptions were made:

Maximum Hourly Emissions:

For NOx, CO, VOC:

- Two turbines in maintenance.

For SO_2, PM_{10} and NH_3:

- Two turbines operate at full load.
- Cooling tower operates at maximum output.
- 140 pounds of ZLD filtercake handling is performed hourly.

Air Quality Table 15
RERC Worst-Case Hourly Emissions

	Maximum Hourly, lb/hr					
	NO_x	CO	VOC	SO_2 [a]	PM_{10}	NH_3
Turbines (2)	89.86	91.86	3.76	0.56	6.00	6.64
Cooling Tower (3-cells)	---	---	---	---	0.0043	---
ZLD Filtercake Handling	---	---	---	---	0.0037	---
Total	89.86	91.86	3.76	0.56	6.01	6.64

Note:
a. The applicant's SO_2 emission estimate has been lowered based on SCAQMD's standard natural gas SO_2 emission factor (0.60 lbs SO_2/MMcuft natural gas).

AIR QUALITY Table 16 summarizes the maximum (worst-case) estimated daily levels of the different criteria pollutants from the turbine and cooling tower. Maximum daily emissions assumptions are detailed below:

For NO_x, CO, and VOC:

- Each turbine undergoes maintenance operations for 5 hours.
- Each turbine operates at full load for 19 hours.

For SO_2, PM_{10} and NH_3:

- Each turbine operates at full load for 24 hours.
- Cooling tower (3-cells) operates at maximum output for 24 hours.
- 1.68 tons of ZLD filtercake handling is performed daily.

Air Quality Table 16
RERC Worst-Case Daily Emissions

	Maximum Daily, lb/day					
	NO_x	CO	VOC	SO_2 [a]	PM_{10}	NH_3
Turbines (2)	620.03	721.10	54.52	13.45	144.0	159.36
Cooling Tower (3-cells)	---	---	---	---	0.103	---
ZLD Filtercake Handling	---	---	---	---	0.089	---
Total	620.03	721.10	54.52	13.45	144.19	159.36

From RERC 2004d, Appendix 6.1-B, Facility Total Potential to Emit – Normal Year (MHC - Maximum Hourly Controlled to calculate Maximum Daily Controlled Total), and SCEC 2004b.
Note:
a. The applicant's SO_2 emission estimate has been lowered based on SCAQMD's standard natural gas SO_2 emission factor (0.60 lbs SO_2/MMcuft natural gas).

AIR QUALITY Table 17 summarizes the annual estimated levels of the different criteria pollutants from the turbine and cooling tower. To assess the annual emissions, the following assumptions were made:

Annual Emissions:

- Each turbine operates at full load for 910 hours per year.
- Each turbine operates in startup mode for 200 hours per year and shutdown mode for 200 hours per year.
- Each turbine is in maintenance for 20 hours per year.
- The cooling tower operates for 1,330 hours per year.
- 93.1 tons of ZLD filtercake is handled annually.

Air Quality Table 17
RERC Annual Emissions

	Maximum Annual, tons/year					
Turbines (2)	NO_x	CO	VOC	SO_2 [a]	PM_{10}	NH_3
Normal Operations	4.09	6.27	0.86	0.25	2.73	3.02
Startup	3.29	2.64	0.20	0.05	0.55	0.40
Shutdown	1.32	2.24	0.20	0.06	0.60	0.66
Maintenance	0.90	0.92	0.04	0.01	0.06	---
Cooling Tower (3-cells)	---	---	---	---	0.003	---
ZLD Filtercake Handling	---	---	---	---	0.002	---
Total	9.60	12.06	1.30	0.37	3.95	4.08

From RERC 2004d, Tables 6.1-19, 6.1-20, 6.1-21, 6.1-22, and 6.1-23 (APTE – Annual Potential to Emit calculated from MHC, except for maintenance emissions which are calculated from the MHU), and SCEC 2004b.
Note:
a. The applicant's SO_2 emission estimate has been lowered based on SCAQMD's standard natural gas SO_2 emission factor (0.60 lbs SO_2/MMcuft natural gas).

Criteria Pollutants Generated From Initial Commissioning

The initial commissioning of a power plant refers to the time frame between the completion of the construction and the reliable production of electricity for sale on the market. For most power plants operating emission limits usually do not apply during the initial commissioning procedures.

Commissioning activities for the RERC CTGs are expected to last a total of 200 hours per turbine (RERC 2004d, page 75). The range of commissioning tests for each CTG at

RERC includes the following: 1) full speed no load tests; 2) multiple load tests, with SCR and oxidation catalyst (uncontrolled assumed); and 3) full load tests, with SCR and oxidation catalyst (NOx emissions during the full load tests are assumed to be uncontrolled based on District Rule requirements for accounting of commissioning emissions prior to having a certified emission monitoring system – the actual NOx emissions will be controlled). The initial commissioning hours would include at least one black start test to ensure that the equipment that will be installed to enable black start power to be fed to the project site from the Riverside WWTP cogen unit operates properly[2] . The Applicant has estimated the initial commissioning emissions in **AIR QUALITY Table 18**.

AIR QUALITY Table 18
Turbine Commissioning Emissions

Commissioning Activities	Operation Duration	NO_x	CO	VOC	SO_x	PM_{10}
(per CTG)	(Hours)	Hourly Emissions, lb/hr				
Full Speed, No Load Test, no control equipment	5	36.24	39.72	3.75	1.62	3.0
Multiple Load Test, with SCR and oxidation catalyst (uncontrolled assumed)	10	29.45	6.62	1.25	1.62	3.0
Full Load Test, with SCR and oxidation catalyst (uncontrolled assumed)	185	44.93	6.89	0.94	1.62	3.0
Total, lbs/turbine	200	8,788	1,539	205	324	600

From RERC 2004c, DR #12.

As shown in this schedule, initial tests would be performed prior to the installation of the SCR system and oxidation catalyst. Under this scenario, NO_x and CO emissions would be high because the emissions control systems would not be functioning. The initial stages of commissioning, where emissions control systems are most likely absent, would likely be conducted sequentially. Later stages, where emissions control systems can be reasonably effective, will likely overlap (RERC 2004c, DR #13).

Intervenor Operating Emission Estimate Methodology Issues

CURE has raised several issues with respect to operating emissions quantification (CURE 2004a, 2004b, 2004d), including:

1. The ZLD system filtercake emissions have not been included
2. The cooling tower PM_{10} emissions do not reflect worst-case conditions
3. Turbine emissions estimates are not based on worst-case operating conditions or proper vendor guarantees (particularly PM_{10} emissions)

[2] The applicant requested that the black start testing event be added to the description of the initial commissioning events in their verbal comments on the DIS provided at the DIS Workshop. The black start testing emissions will be no higher than the uncontrolled emissions currently shown in **AIR QUALITY Table 18**. It should also be noted that the power for the black start testing will be provided by the existing Riverside WWTP Cogen engines that operate year-round, so no additional emissions will result from the black start testing.

Staff has reviewed these comments and the revised emission assumptions provided by the applicant and has determined the following findings for each of these issues:

1. ZLD Filtercake Emissions

   The worst-case ZLD filtercake handling emissions, a minimal emission source, have been calculated and added into the operating emissions estimate by the applicant.

2. Cooling Tower PM_{10} Emissions

   The cooling tower intake water and operating assumptions have been re-evaluated by the applicant and a new worst-case emission estimate provided that assumes that the intake water undergoes demineralization. The new emission estimate shows that the cooling tower PM_{10} emissions will be minimal at approximately 5 pounds of PM_{10} per year.

3. Turbine Emissions

   The applicant has provided their estimates of worst-case turbine emissions. Staff has no specific vendor information suggesting that these emissions estimates cannot be met, or that SCAQMD will not accept any of the criteria emission estimates provided by the applicant. The LM6000 turbine PM_{10} source test data listed by CURE (CURE 2004d) does not provide appropriate context for evaluation, does not reflect Southern California natural gas fuel quality, generally shows emissions well below the applicant's 3.0 lbs/hr emission factor (particularly for the peaking cases), and is six to nine years old and so may not reflect the PM_{10} emission profiles for current LM6000 turbines. Regardless, if SCAQMD does require slightly modified emission estimates for any of the criteria pollutants, the operating limits for the facility may have to be reduced to maintain the annual emissions for the criteria pollutants (excepting NOx and CO) below four tons per year. This is actually a permitting LORS issue that the intervenor should take up with SCAQMD. Staff is satisfied that SCAQMD and the applicant will ensure that the permitted turbine PM_{10} emissions remain below 4 tons per year.

Greenhouse Gas Emissions Reporting

In addition to regulated criteria pollutants, the combustion of natural gas produces air emissions known as greenhouse gases. These include primarily carbon dioxide and methane (unburned natural gas). Greenhouse gases are known to contribute to the warming of the earth's atmosphere. Climate change from rising temperatures represents a risk to California's economy, public health, and environment due to changes in sea levels that could lead to flooding of coastal communities, drought, forest fires, decline of fish populations, reduced hydropower opportunities, and loss of habitat. In 1998, the Energy Commission identified a range of strategies to prepare for an uncertain climate future, including a need to account for the environmental impacts associated with energy production, planning, and procurement (CEC 1998, p.5). In 2003, the Energy Commission recommended that the state should require reporting of greenhouse gas emissions as a condition of state licensing of new electric generating facilities (CEC 2003, p. 42). Staff recommends Condition of Exemption **AQ-G2** which

requires the project owner to report the quantities of each greenhouse gas emitted as a result of facility operation. Such reporting would be done in accordance with accepted reporting protocol as specified.

IMPACTS

Following is the Environmental Checklist that identifies potential impacts in this issue area. Below the checklist is a discussion of each impact, and an explanation of the impact conclusion.

ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY – Would the project:				
A. Conflict with or obstruct implementation of the applicable air quality plan?				
Ozone Plan		X		
PM_{10} Plan		X		
Carbon Monoxide Plan			X	
B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
D. Expose sensitive receptors to substantial pollutant concentrations?		X		
E. Create objectionable odors affecting a substantial number of people?			X	

Significance Criteria

Staff has used two main significance criteria in evaluating this project. First, all project emissions of nonattainment criteria pollutants and their precursors (NO_x, VOC, PM_{10} and SO_2) are considered to be significant and need to be mitigated to the extent feasible. Second, any AAQS violation or any contribution to any AAQS violation caused by any project emissions is considered to be significant and must be mitigated to the extent feasible. For construction emissions, the mitigation that is considered is limited to controlling both construction equipment tailpipe emissions and fugitive dust emissions to the maximum feasible extent. For operating emissions, the mitigation includes both feasible emission controls and the use of RECLAIM Trading Credits (RTCs) to offset the NO_x emissions, and the use of other emission reduction credits or emission reduction measures to offset the other nonattainment criteria pollutants and their precursors.

A. Conflict with Air Quality Plan: Less Than Significant Impact

The proposed project is located in Riverside County, and is under the jurisdiction of the South Coast Air Quality Management District (District). The South Coast Air Basin (SCAB) is designated as non-attainment for both federal and state ozone and PM_{10} standards. One-hour ozone is classified under federal and state standards as extreme non-attainment. Eight-hour ozone is classified under federal standards as severe non-attainment. PM_{10} is designated as serious non-attainment and non-attainment under federal and state standards, respectively. The SCAB is designated as nonattainment of the federal CO standard; however, the portion of Riverside County located in the SCAB is in attainment of the state CO standard, which for the state standard is determined at the county level rather than for the basin as a whole. The SCAB is also designated as nonattainment of the state $PM_{2.5}$ standard, and is proposed to be designated as nonattainment of the federal $PM_{2.5}$ standards. All other federal and state criteria pollutants (NO_2 and SO_2) are considered to be in attainment by the state, and unclassified/attainment by federal standards.

The SCAQMD is the lead agency for attaining timely compliance with federal standards within the Riverside County portion of the South Coast Air Basin. The District is responsible for developing those portions of the State Implementation Plan (SIP), and the Air Quality Management Plan (AQMP), that deal with certain stationary and area source controls and, in cooperation with the transportation planning agencies (TPAs), the development of transportation control measures (TCMs). The California Air Resources Board (CARB) is responsible for submitting the SIP to USEPA.

Ozone

The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003 (SCAQMD 2004d). The 2003 AQMP updates the attainment demonstration for the federal 1-hour ozone standard (The initial attainment demonstration for the 8-hour ozone standard is not yet due to EPA). The 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the Ozone SIP for the Air Basin for the attainment of the federal ozone air quality standard. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/99 Plan) from all sources, specifically those under the jurisdiction of CARB and the USEPA, which account for approximately 80 percent of the ozone precursor emissions in the Air Basin.

The project will be required to comply with all applicable District rules and regulations. The SCAQMD rules and regulations specify the emissions control and offset requirements for new sources such as the RPU's Riverside Energy Resource Center. RERC will use Best Available Control Technology (BACT) to control the project's emissions. In addition, the applicant proposes to fully mitigate the operational emissions of NO_x by the use of emissions RECLAIM Trading Credits (RTCs) obtained by the applicant, and the "actual VOC emissions"[3] are proposed to be fully mitigated through offsets provided by the District through their SIP approved NSR permitting

[3] The "actual VOC emissions" are defined by SCAQMD to be 80 percent of the potential to emit.

program, which is fully explained in the operations mitigation section. Therefore, the project will not conflict with the Ozone attainment plan.

PM_{10}

The SCAQMD Governing Board adopted the 2003 Air Quality Management Plan (AQMP) on August 1, 2003. The 2003 AQMP updates the attainment demonstration for the federal PM_{10} standards. The 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP. Three new control measures listed in the 2003 AQMP could be applicable to the construction or operation of the RERC project: 1) BCM-07 Further PM_{10} Reductions from Fugitive Dust Sources (which may be reflected in the recent revision to District Rule 403); 2) MSC-04 Emission Reductions from Miscellaneous Ammonia Sources; and 3) FSS-06 Further Emission Reductions from In-Use Off-Road Equipment and Vehicles. The applicant will have to comply with the recently revised fugitive dust control Rule 403. However, the other two AQMP control measures have not yet undergone rulemaking. The incorporation of the 5 ppm ammonia slip BACT requirements should meet the ammonia emission control intent of control measure MSC-04; and diesel engine provisions in staff's recommended Condition of Exemption **AQ-C3** should meet the intent of control measure FSS-06.

The project will be required to comply with all applicable District rules and regulations. The SCAQMD rules and regulations specify the emissions control and offset requirements for new sources such as the RPU's Riverside Energy Resource Center. RERC will use Best Available Control Technology (BACT) to control the project's emissions. In addition, the operational emissions of PM_{10} and the federally regulated PM_{10} precursors will be mitigated as necessary using offsets provided by the applicant and the District as required by the District's SIP approved NSR and RECLAIM permitting programs. Therefore, the project will not conflict with the PM_{10} attainment plan.

Carbon Monoxide

The District's 2003 AQMP updated the CO attainment demonstration provided in the 1997 AQMP (SCAQMD 2004c), which in term updated the attainment demonstration given in the 1994 AQMP. No major changes in the CO attainment strategy given in the 1994 AQMP have been proposed by the 1997 and 2003 AQMPs. The CO attainment strategy is primarily focused on emission reductions from onroad mobile sources (SCAQMD 2004y). While the entire non-desert portion of the SCAB is designated as a CO non-attainment area, the project area does not actually experience any exceedances of the federal CO standards and the project is located too far away from the sole remaining south central Los Angeles area that occasionally exceeds the federal CO 8-hour standard. Additionally, the project's maximum controlled CO emission levels, except during startup/shutdown/maintenance periods, would be at a concentration that is already below the federal CO standards, and modeling results (see impact issue "B" below) indicate that the project's construction and operating emissions will not cause new local exceedances of the federal CO standard. Therefore, the project will not conflict or obstruct the implementation of the 1994, 1997, or 2003 AQMPs.

Applicant's Proposed Mitigation

See the mitigation description under impact issue "B" below.

Staff Proposed Mitigation

See the mitigation description under impact issue "B" below.

B. Violate Air Quality Standard or Contribute to Violation: Less Than Significant With Mitigation Incorporated

For this project, the impacts from construction emissions and operating emissions were quantified using air dispersion models, and the results of the modeling analysis were compared to ambient air quality standards and to the District's localized significance threshold (LST) criteria[4].

Modeling Approach

The applicant performed an air dispersion modeling analysis to evaluate the project's potential impacts on the existing ambient air pollutant levels, both during construction and operation. An air dispersion modeling analysis usually starts with a conservative screening level analysis. Screening models use conservative assumptions, such as for the meteorological conditions, which may or may not actually occur in the area. The impacts calculated by screening models, therefore, can be double or more than the actual or expected impacts. If the screening level impacts are significant, refined modeling analysis is performed. A major difference in the refined modeling is that hour-by-hour meteorological data collected in the vicinity of the project site is used.

The applicant used the USEPA's Industrial Source Complex (ISC), Short-Term Model (ISCST3, Version 02035), to estimate the impacts of the project's NO_X, PM_{10}, CO and SO_X emissions resulting from project construction and operation. The ISC model is a steady-state Gaussian plume model, appropriate for regulatory use, used to assess pollution concentrations from a wide variety of emission sources.

The applicant used the SCREEN3 model to determine worst-case 1-hour NO_2, CO and SO_2 impacts under fumigation conditions. The SCREEN3 model is a steady-state Gaussian plume model, appropriate for the screening level modeling of single point sources to assess worst-case impacts.

NO_x-to-NO_2 conversion/adjustment factors were used, in accordance with SCAQMD guidance, to conduct the NO_2 impact analyses. These conversion/adjustment factors are based on the fact that NO_x emissions from internal combustion sources (i.e. diesel-fueled construction equipment engines and natural gas turbines) are initially released into the atmosphere predominately in the form of NO, which over time oxidizes to NO_2. The annual adjustment factor, a NO_x-to-NO_2 conversion factor of 0.59 provided by the SCAQMD modeling staff, reflects the conditions in the area surrounding the construction site, and this same factor was used in both the facility operation and facility construction air quality impact assessments (RERC 2004d, page 93). For construction

[4] The LST thresholds, while shown for comparison with the modeling results, are not being used as significance criteria for this project.

emissions, an ozone limiting method adjustment factor was applied to the 1-hour NO_x modeling results to determine worst-case NO_2 impacts. The 1-hour NO_x-to-NO_2 adjustment factor was taken from the SCAQMD Local Significance Threshold (LST) Methodology and was confirmed by the applicant in coordination with SCAQMD CEQA staff (RERC 2004d, page 98).

A description of the applicant's modeling analyses is provided in Section 6.1.9 of the Application (RERC 2004d, pages 89 to 100), and in the Appendices (RERC 2004d, Appendix 6.1-F to 6.1-I). The applicant utilized hourly meteorological data collected at the Riverside, California Station, for the year 1981, which was preprocessed and supplied by the SCAQMD (RERC 2004d, page 90).

Construction Impacts

The following section discusses the project's short-term direct construction ambient air quality impacts, as estimated by the applicant.

Applicant Construction Impact Analysis

The applicant recalculated and remodeled the emissions of the RERC on-site construction activities based on questions and comments from staff (RERC 2004c, RERC 2004d, CEC 2004), and from comments from CURE (CURE 2004c). This analysis replaces the analysis provided in the original SPPEA and the modeling was completed using the ISCST3 (Version 02035) model. The windblown dust emissions were modeled as single area sources that covered the total area of the construction site. The exhaust and fugitive dust emissions were modeled as a four volume sources each distributed at the major construction areas (near turbine locations, northern auxiliary facility locations, etc) within the proposed project site property. The emission rates determined for each volume source were based on an applicant evaluation of the activities surrounding each volume source, including the amount of surface preparation needed in each major construction area within the property. To determine the construction impacts on short-term ambient standards (i.e. 1-hour through 24 hours), the worst-case daily onsite construction emission levels shown in **AIR QUALITY Table 10** were used. For pollutants with annual average ambient standards, the annual onsite emissions levels shown in **AIR QUALITY Table 11** were used. The annual emissions modeling analysis is conservatively based on the worst-case month's emissions occurring over the entire anticipated 154-day on-site construction schedule (SCEC 2004b). The annual modeling results were scaled to account for the difference between the 154-day construction schedule and 365 days in a year (SCEC 2004b). Modeling assumed that construction activities would occur 11 hrs/day (from 7 am to 6 pm), or 12 hrs/day (from 7 am to 7 pm) depending on the season, and windblown dust would occur 24 hrs/day (SCEC 2004b, RERC 2004d, Appendix 6.1-H). **AIR QUALITY Table 19** provides the results of this modeling analysis.

Air Quality Table 19
RERC Ambient Air Quality Impacts
Applicant Worst-Case Fence Line Construction ISC Modeling Results

Pollutant	Averaging Period	Project Impact (ppm)	Background (ppm) [b]	Total Impact (ppm)	Limiting Standard (ppm)	Type of Standard	Percent of Standard
NO_2 [a]	1-Hour	0.060	0.150	0.21	0.25	CAAQS	84
	Annual	0.0085	0.024	0.00325	0.053	NAAQS	61
PM_{10}, ($\mu g/m^3$)	24-Hour	70.4	**164**	**234.4**	50	CAAQS	**469**
	Annual	12.4	**63.3**	**75.7**	20	CAAQS	**379**
CO	1-Hour	0.360	8	8.36	20	CAAQS	42
	8-Hour	0.095	4.48	4.58	9	CAAQS	51
SO_2	1-Hour	0.00036	0.02	0.02	0.25	CAAQS	8
	3-Hour [c]	0.00025	0.018	0.0184	0.5	NAAQS	4
	24-Hour	0.00005	0.012	0.012	0.04	CAAQS	30
	Annual [d]	<0.00005	0.002	0.002	0.03	NAAQS	7

From SCEC 2004b.
Note(s):
a. 1-hour NO_x value was adjusted by an ozone limiting factor of 0.114 per SCAQMD guidance for 200 meters from the fence line. The annual value is multiplied by the Annual NO_x Ratio Method (ARM) SCAQMD Riverside guidance value of 0.59.
b. Background values have been adjusted per staff recommended background concentrations shown in AIR QUALITY Table 9.
c. 3-hour SO_2 value is assumed to equal 90% of 1-hour SO_2 value.
d. The annual SO2 impacts were not actually modeled: however, they can be assumed to be less than the maximum 24-hour impact.

As shown by the modeling results provided in **AIR QUALITY Table 19**, all of the worst-case fence line construction pollutant impacts, except PM_{10}, are predicted to be lower than the most stringent ambient air quality standard and, therefore, are not significant. The construction 24-hour and annual arithmetic PM_{10} impacts exceed the ambient air quality standards. SCAQMD has recently adopted a local significance threshold policy that provides a CEQA Construction PM_{10} concentration significance threshold of 10.4 $\mu g/m^3$ at the nearest residential or other sensitive receptor (SCAQMD 2003). While the modeling results show that the worst-case 24-hour maximum fence line concentration is greater than this value, the PM_{10} concentrations are predicted to decrease quickly with distance and are predicted to be less than 10.4 $\mu g/m^3$ at the nearest residential receptor (maximum residential 24-hour concentration is predicted to be 9.3 $\mu g/m^3$). It should be noted that the applicant's modeled emission estimates assumed ARB/EPA Tier 1 compliant diesel engines, and assumed a very high efficiency for fugitive dust control. Staff believes that without these assumed emission mitigation measures, the NO_x and PM_{10} modeling analysis, using the modeling methods employed by the applicant, would have predicted significant NO_2 and PM_{10} concentrations. Staff concludes that with appropriate mitigation, such as that assumed and proposed by the applicant in their construction emission calculations, the construction emission impacts will be less than significant.

The potential ambient air quality impacts associated with the construction of the natural gas pipeline, water pipelines and the transmission line interconnect are expected to be minimal since construction would occur for a short duration and require minimal equipment as the interconnections for each, except the transmission line, are a maximum of one-quarter mile. Therefore, these activities were not included in the applicant's construction impact modeling analysis.

Intervenor Construction Impact Modeling Results

CURE provided a summary of a separate PM_{10} construction emission impact modeling analysis that they completed (CURE 2004d). However, as of the completion of the FIS they did not provide the modeling output files for review. Therefore, staff cannot determine the veracity or accuracy of CURE's construction modeling analysis results. However, a review of the model inputs provided by CURE indicates the modeling incorporated PM_{10} fugitive dust emission estimates that include a major error related to silt content that CURE assumed. This error significantly overestimates the fugitive dust emission potential, with the overall result that this issue alone would cause the emission impacts to be overpredicted by approximately a factor of two. Pending receipt of all of CURE's modeling files, staff may provide an addendum to the FIS or later written testimony that provides a complete summary and review of CURE's construction PM_{10} modeling analysis.

Construction Impact Significance Criteria Consideration

The intervenor states (CURE 2004c, 2004d) that the significance criteria for this project are based on SCAQMD's daily emission thresholds published in their CEQA Air Quality Handbook (SCAQMD 1993). However, the CEC is lead agency in this case and does not use the SCAQMD emission thresholds as significance criteria. Staff has to evaluate power plant siting cases throughout the state and has generally concluded that using local significance criteria would not provide a consistent basis for analysis. Local significance criteria vary widely, both in methodology and in numerical significance threshold triggers, and many do not include any consideration of project specifics, such as local air quality concerns or the location and number of receptors near the site. Staff conducts a site specific analysis that addresses local air quality, the construction requirements of the project, and the number and type of sensitive receptors that exist near the site.

Staff is also not using the SCAQMD draft LST methodology as the significance criteria for this case but does present the PM_{10} LST concentration for comparison with the applicant's modeling results.

Cure also contends that the $PM_{2.5}$ emission impacts are significant (CURE 2004d). Currently, staff does not conduct a separate $PM_{2.5}$ emission or modeling analysis. Staff uses the PM_{10} significance analysis to determine whether construction particulate (PM_{10} or $PM_{2.5}$) has the potential to be significant. Construction particulate emissions and emission impacts are typically dominated by fugitive dust emissions, and the $PM_{2.5}$ fraction of fugitive dust emissions is low; so $PM_{2.5}$ impacts will be considerably lower than the PM_{10} impacts. Therefore, staff considers the PM_{10} significance analysis to address the potential for $PM_{2.5}$ impacts.

Staff rejects CURE's assumed significance criteria and their corresponding finding of significant impacts. Staff has found the project's construction, with staff's suggested mitigation measures, will not cause significant impacts.

Construction Mitigation

As described in the applicable LORS section, District Rule 403 regulates fugitive dust activities during the construction phase of a project. However, compliance with Rule 403 may not be sufficient to ensure that near field construction impacts will be less than significant. For example, Rule 403 does not regulate construction equipment tailpipe emissions. Considering the poor ambient air quality in the project area, staff will recommend that construction emission impacts be mitigated to the greatest feasible extent, without causing any direct conflicts with the stringent fugitive dust control requirements now listed in the recently revised version of Rule 403.

Applicant's Proposed Mitigation

The applicant proposes to implement the following measures to reduce emissions during construction activities (RERC 2004d, p. 89). The applicant's PM_{10} emissions estimates in **AIR QUALITY Tables 10** through **12** and construction modeling results in **AIR QUALITY Table 19** assume the use of these emission control measures, and additional unstated fugitive dust control measures to meet the assumed fugitive dust control efficiency.

To control exhaust emissions from heavy diesel construction equipment:

- Use CARB ultra-low sulfur content diesel fuel in construction equipment.
- Use low-emitting diesel engines meeting EPA emission standards for construction equipment, to the extent practical.

To control fugitive dust emissions:

- Use water for dust suppression during work hours.
- Use a track-out control device and/or truck tire washing and/or street sweeping to reduce onroad dust emissions, if warranted.

Adequacy of Proposed Mitigation

The applicant's proposed mitigation was included in the modeling analysis as summarized in **AIR QUALITY Tables 19**. The applicant's revised PM_{10} emission estimate assumes a very aggressive control efficiency factor. For example, an unpaved road fugitive dust control efficiency of 85% was assumed. However, even with this control efficiency factor included, the modeling analysis shows that the applicant's mitigated construction PM_{10} impacts could be potentially significant at the fence line if the emissions are not properly mitigated, without ongoing compliance monitoring, and if no construction schedule limitations are imposed. Therefore, the applicant's proposed mitigation is not considered adequate.
Staff is proposing additional construction mitigation measures to mitigate the potentially significant construction PM_{10} impacts.

Staff Proposed Mitigation

Staff is recommending construction PM_{10} emission mitigation measures that include some of the mitigation measures proposed by the applicant and several additional

construction PM_{10} emission mitigation measures and compliance assurance measures specified in Conditions of Exemption **AQ-C1** through **AQ-C5**.
Staff recommends **AQ-C1** to require the applicant to have an on-site construction mitigation manager, who will be responsible for the implementation and compliance of the construction mitigation program. The documentation of the ongoing implementation and compliance with the construction mitigation program would be provided in the monthly construction compliance report that is required in staff's recommended Condition of Exemption **AQ-C2**.

Staff recommends fugitive dust and diesel engine mitigation measures be provided in Condition of Exemption **AQ-C3**. **AQ-C3** includes revisions to, or additions to, the construction emission mitigation measures proposed by the applicant; including the following:

- use of gravel in high traffic areas and the construction laydown area;
- covering and treatment of soil stockpiles;
- use of paved access aprons;
- limit traffic speed to 10 mph;
- suspension of all earth moving activities under windy (i.e. sustained winds >25 mph) conditions;
- restrict idle time, to the extent practical, to no more than 10 minutes;
- use of diesel engines that meet EPA Tier I EPA certified standards, or better, for off-road equipment; and
- use of catalyzed particulate filters (soot filters) on diesel engines, as practical, for equipment larger than 50 hp when the air quality construction mitigation manager (AQCMM) certifies that engines meeting or exceeding Tier 1 standards are not available for a particular necessary equipment type[5].

Staff recommends Conditions of Exemption **AQ-C4** to limit visible emissions from construction activities at the construction sites, and limit the project related construction visible emissions from occurring within 100 feet of occupied structures. This condition is recommended to avoid short-term adverse nuisance dust conditions, and is not recommended as a long-term health protective condition like **AQ-C3** and **AQ-C5**.

Staff recommends Condition of Exemption **AQ-C5** to limit the applicant to an 11-hour-day construction work schedule during the high emission site preparation activities, and to require polluting construction activities to start no earlier than 7 am. The applicant used a work schedule of 11 hours per day (7 am to 6 pm) to develop their impact assessment (SCEC 2004b). A significant increase to this schedule, under most cases, could significantly increase the quantity of daily emissions of dust and significantly increase the local impacts. The applicant has indicated that to comply with local noise

[5] The description of the required use of Tier 1 or better engines or soot filters was clarified, as requested by the applicant in their verbal comments on the DIS provided at the DIS Workshop, to be consistent with the requirements of Condition of Exemption AQ-C3 (o) (3).

standards, they will limit construction to between 7 am to 7 pm weekdays, 8 am to 5 pm on Saturdays, and no construction will occur on Sundays and Federal holidays (RERC 2004a, page 205). This recommendation, which is necessary to mitigate the maximum 24-hour PM_{10} construction impact potential to insignificant levels, does not significantly conflict with the applicant's stated maximum construction schedule.

Staff believes that the construction air quality impacts will be less than significant with the implementation of the mitigation and compliance assurance measures contained in the recommended Conditions of Exemption.

Intervenor Construction Mitigation Adequacy Issues

CURE contends that there are issues with the emission estimates, modeling results, and mitigation assumptions and effectiveness assumed by the applicant and by staff (CURE 2004b, 2004c, 2004d). These issues, which CURE believes relate to the potential for significant project impacts, include:

1. Mitigation measure effectiveness
2. Mass emissions remain significant after mitigation
3. Ambient air quality impacts remain significant
4. Construction Schedule

Staff has reviewed the applicant's revised emission calculations and CURE's contentions and provides the following rebuttal to each of the contentions:

1. Mitigation Measure Effectiveness

   CURE contends that the mitigation measures proposed by staff are ineffective because many were assumed by the applicant in their construction emission estimate and modeling impact analysis (CURE 2004c, page 11). However, the fact that the measures are included in the impact analysis does not diminish their effectiveness in controlling fugitive dust emissions.

   CURE also contends that the measures address emissions not included in the emissions estimates. However, staff believes recommending emission mitigation measures such as controlling emissions from trucks hauling bulk materials on public roadways is a reasonable mitigation measure to reduce these offsite fugitive emission sources so that these offsite fugitive dust emission sources are negligible and do not need to be calculated. Additionally, staff believes that other measures mentioned by CURE, such as trackout and runoff controls, are implicitly included in the emission estimates. Specifically, without trackout and runoff controls, the paved road silt loading assumptions would need to be revised as the local paved roads would become covered in dirt conveyed by traffic and runoff from the site. Therefore, staff believes that all of the mitigation measures recommended in Condition of Exemption **AQ-C3** have value and will reduce the project's construction emissions.

   Staff's recommended construction emission mitigation measures have been developed carefully over time, based on the experience gained during the several

dozen cases sited over the past few years and based on actual onsite project compliance experience. The mitigation measures have been designed to provide the maximum feasible emission mitigation while also requiring onsite personnel to be responsible to enforce and document mitigation measure compliance.

2. Mass Emissions Significance

   As noted previously, staff rejects the mass emissions significance criteria that CURE contends is the significance criteria for this project. Staff has not used the SCAQMD CEQA handbook emission thresholds as significance criteria for any of the past cases sited within the SCAQMD air district over the last few years, including much larger cases with higher construction emission estimates. Rather than using an emission threshold significance criterion, staff conducts a site specific analysis that addresses local air quality, the construction requirements of the project, and the number and type of sensitive receptors that exist near the site.

3. Ambient Air Quality Impacts Are Significant (PM_{10}/$PM_{2.5}$)

   As noted previously, staff has found that the construction ambient air quality impacts are not significant. This assessment is based on the revised applicant modeling results. CURE's contention is based on modeling results that have not been provided to staff for review and which use emission estimates that are known to significantly overestimate the fugitive dust emissions. Therefore, staff rejects this contention, which staff concludes is based on a faulty emission modeling analysis.

4. Construction Schedule

   CURE contends that the construction schedule allowed in the recommended Condition of Exemption **AQ-C5** allows the potential for significant impacts not evaluated in the DIS. This contention may have been partially true at the time of the DIS publication, as the modeling originally performed by the applicant assumed an eight-hour schedule. However, at that time staff reviewed the eight-hour results to determine that a twelve-hour schedule could be allowed under the correct site conditions. Regardless, this contention is no longer valid as Condition of Exemption **AQ-C5** has been revised to match the modeled construction schedule.

Operation Impacts

The following section discusses the project's direct ambient air quality impacts, as estimated by the applicant. The applicant performed direct impact modeling analyses, including operations, fumigation, startup, and commissioning impact modeling. When the District issues its Permit to Construct, the RERC permit emission levels must be no greater than the emissions presented in this analysis in order for the impact assessment presented herein to remain valid.

Direct Impacts

Applicant Operations Modeling Impact Analysis

A refined modeling analysis was performed to identify the worst-case ground-level impacts from operational emissions of the proposed project. The ISCST3 model (Version 02035) was used for the refined modeling analysis with one year of meteorological data (1981) from Riverside. The applicant conducted a Good Engineering Practice (GEP) stack height analysis using the Building Profile Input Program (BPIP) Version 98086, and downwash effects were modeled for the facility using the ISCST3 model. The applicant's modeling analysis was not revised to include the potential ZLD filtercake handling emissions or the reduction in the cooling tower emission estimate. The net emission change is a reduction in PM_{10} emissions, so the PM_{10} modeling results presented likely overestimated the PM_{10} impact potential.

The applicant's predicted maximum concentrations of the non-reactive pollutants from the turbines and cooling tower operating under the worst-case of either startup or normal full load (depending on the pollutant) conditions are summarized in **AIR QUALITY Table 20.**

Air Quality Table 20
RERC Ambient Air Quality Impacts
Applicant Operational Impact ISC Modeling Results

Pollutant	Averaging Period	Project Impact (ppm)	Background (ppm) [b]	Total Impact (ppm)	Limiting Standard (ppm)	Type of Standard	Percent of Standard
NO_2	1-Hour	0.0129	0.150	0.163	0.25	CAAQS	65
	Annual	0.00002	0.024	0.024	0.053	NAAQS	45
PM_{10}, ($\mu g/m^3$)	24-Hour	1.797	**164**	**165.8**	50	CAAQS	**332**
	Annual	0.187	**63.3**	**63.49**	20	CAAQS	**317**
$PM_{2.5}$, ($\mu g/m^3$)	24-Hour	1.797	**119.6**	**121.4**	65	NAAQS	**187**
	Annual	0.187	**31.0**	**31.19**	12	CAAQS	**260**
CO	1-Hour	0.0170	8	8.02	20	CAAQS	40
	8-Hour	0.0109	4.48	4.49	9	CAAQS	50
SO_2	1-Hour	0.0009	0.02	0.02	0.25	CAAQS	8
	3-Hour [c]	0.0008	0.018	0.0188	0.5	NAAQS	4
	24-Hour	0.0004	0.012	0.0124	0.04	CAAQS	31
	Annual [d]	<0.0004	0.002	0.002	0.03	NAAQS	7

From RERC 2004c (DR #7); and RERC 2004d, Table 6.1-35 and Appendix 6.1-G.
Note(s):
a. Modeled annual NO_x corrected to NO_2 using Annual NO_x Ratio Method (ARM) SCAQMD Riverside guidance value of 0.59.
b. Background values have been adjusted per staff recommended background concentrations shown in AIR QUALITY Table 9.
c. 3-hour SO_2 value is assumed to equal 90% of 1-hour SO_2 value.
d. The annual SO_2 impacts were not actually modeled: however, they can be assumed to be less than the maximum 24-hour impact.

The applicant's modeling results indicate that the project's operational impacts would not create violations of NO_2, SO_2 or CO standards, but could further exacerbate violations of the PM_{10} and $PM_{2.5}$ standards. In light of the existing PM_{10} non-attainment status for the project site area, staff considers the project's PM_{10} and criteria pollutant PM_{10} precursor emissions to be significant and, therefore, the project PM_{10} and PM_{10} precursor emissions must be fully mitigated.

Applicant Fumigation Modeling Impact Analysis

There is the potential that higher short-term concentrations may occur during fumigation conditions. During the early morning hours before sunrise, the air is usually very stable. During such stable meteorological conditions, emissions from elevated stacks rise through this stable layer and are dispersed. When the sun first rises, the air at ground level is heated, resulting in a vertical (both rising and sinking air) mixing of air for a few hundred feet or so. Emissions from a stack that enter this vertically mixed layer of air will also be vertically mixed, bringing some of those emissions down to the ground level. Later in the day, as the sun continues to heat the ground, this vertical mixing layer becomes higher and higher, and the emissions plume becomes better dispersed. The early morning pollution event, called fumigation, usually lasts approximately 30 to 90 minutes.

Fumigation conditions are generally only compared to 1-hour standards. The applicant analyzed the air quality impacts under fumigation conditions from the project turbines using the SCREEN3 model. The results of the analysis, as shown in **AIR QUALITY Table 21**, indicate that the fumigation impacts would not exceed applicable 1-hour AAQS.

Air Quality Table 21
Maximum RERC Fumigation Impacts, ppm

Pollutant	Averaging Period	Project Impact (ppm)	Background (ppm) [a]	Total Impact (ppm)	Limiting Standard (ppm)	Type of Standard	Percent of Standard
NO_2	1-Hour	0.006	0.15	0.156	0.25	CAAQS	62
CO	1-Hour	0.011	8	8.011	20	CAAQS	40
SO_2	1-Hour	0.0002	0.02	0.0202	0.25	CAAQS	8

From RERC 2004d Table 6.1-37, Appendix 6.1-F and 6.1-G.
Note(s):
a. Background values have been adjusted per staff recommended background concentrations shown in AIR QUALITY Table 9.

Maximum fumigation impacts for the turbines were predicted to occur about 11.35 miles from the facility (RERC 2004d, Appendix 6.1-F). These fumigation impacts were based on the worst-case hourly maintenance emissions as shown in **AIR QUALITY Table 15.**

Applicant Commissioning and Worst-Case Operating Modeling Impact Analysis

The applicant modeled the worst-case commissioning emissions as a full load case with no emission control. This is the same case as the “normal operating” maintenance hour case proposed by the applicant and the applicant states that this modeling analysis would reflect both the worst-case commissioning and the worst-case short-term operating impacts.

The exhaust parameters used are the same as those used for the emission controlled full load modeling summarized in **AIR QUALITY Table 20**. The applicant modeled the commissioning impacts using ISCST3 assuming both turbines would be operating under high-emissions commissioning scenarios at the same time. The results of the commissioning emissions modeling analysis are shown in **AIR QUALITY Table 22.**

Air Quality Table 22
RERC Ambient Air Quality Impacts
Applicant Commissioning Worst-Case Short-Term Impact Modeling

Pollutant	Averaging Period	Project Impact (ppm)	Background (ppm) [a]	Total Impact (ppm)	Limiting Standard (ppm)	Type of Standard	Percent of Standard
NO_2	1-Hour	0.0035	0.150	0.185	0.25	CAAQS	74
PM_{10}, ($\mu g/m^3$)	24-Hour	1.797	**164**	**165.8**	50	CAAQS	**332**
$PM_{2.5}$, ($\mu g/m^3$)	24-Hour	1.797	**119.6**	**121.4**	65	NAAQS	**187**
CO	1-Hour	0.059	8	8.06	20	CAAQS	40
	8-Hour	0.041	4.48	4.52	9	CAAQS	50
SO_2	1-Hour	0.0009	0.02	0.02	0.25	CAAQS	8
	3-Hour [b]	0.0008	0.018	0.0188	0.5	NAAQS	4
	24-Hour	0.0004	0.012	0.0124	0.04	CAAQS	31

From RERC 2004c (DR #14); RERC 2004d, Table 6.1-36 and Appendix 6.1-G.
Note(s):
a. Background values have been adjusted per staff recommended background concentrations shown in AIR QUALITY Table 9.
b. 3-hour SO_2 value is assumed to equal 90% of 1-hour SO_2 value.

The modeling results indicate that the commissioning emissions do not have the potential to cause significant ambient air quality impacts. Additionally, these results are considered to be conservative, as the applicant has stated that no more than one turbine would be operated in an uncontrolled mode (commissioning or startup) at a time. The other turbine will either be shutdown or operating in a controlled mode up to full load (RERC 2004b, Data Response 11).

Intervenor Operation Impacts Issue

CURE contends that the DIS did not include an assessment of all of the operation emissions sources such as the ZLD system emissions, correct worst-case cooling tower emissions and the black start emissions. CURE is correct that the applicant's modeling analysis does not include the minimal ZLD filtercake handling emissions, but the model uses what is now a significant overestimation of the cooling tower emission rate, so the results should be conservative. As noted previously, there are no incremental emissions from a black start. The turbine startup emissions do not increase during a black start; and while the power used during a black start is routed from the Riverside WWTP cogen plant, the cogen plant operates continuously with the same emission potential regardless of whether a black start would occur at the RERC.

Secondary Pollutant Impacts

The project's gaseous emissions of NO_x, SO_2, VOC and ammonia can contribute to the formation of the secondary pollutants, ozone and PM_{10}. There are air dispersion models that can be used to quantify ozone impacts, but they are used for regional planning efforts where hundreds or even thousands of sources are input into the modeling to determine ozone impacts. No regulatory agency models are approved for assessing single source ozone impacts. However, because of the known relationship of NO_x and VOC emissions to ozone formation, it can be said that the emissions of NO_x

and VOC from the RERC do have the potential (if left unmitigated) to contribute to higher ozone levels in the region.

Secondary PM_{10} formation is the process of conversion from gaseous reactants to particulate products. The process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Currently, there are no agency (EPA or CARB) recommended models or procedures for estimating nitrate or sulfate formation. Nitrogen oxides first react to form nitric acid, which then reacts reversibly with ammonia to form ammonium nitrate. Sulfur oxides first react to form sulfuric acid, which then react irreversibly to form ammonium bisulfate and ammonium sulfate. Because of the known relationship of NO_x and SO_2 emissions to secondary PM_{10} formation, these emissions, if left unmitigated, will contribute to higher PM_{10} levels in the region.

The ammonia emissions from the project would come from the SCR system, which controls the NO_x emissions, as unreacted ammonia, or "ammonia slip," that remains in the exhaust after passing through the SCR catalyst system. While the ammonia emissions are recognized as a necessary by-product of the NO_x control system, staff still encourages the applicant to control their ammonia slip emissions to the lowest possible extent, while maintaining the guaranteed NO_x emission limit. CARB has indicated that districts should consider recommending an ammonia limit of 5 ppm for gas turbines (CARB 1999), and this is the level proposed by the applicant and the level expected to be required by SCAQMD.

Staff believes that mitigating the project's criteria PM_{10} precursors at a minimum 1:1 ratio would mitigate the potential for significant secondary pollutant impacts. The status of the project's proposed offset package is discussed further in the following section.

Operations Mitigation

Applicant's Proposed Mitigation

Emission Controls

As discussed in the project description section, the applicant proposes to employ a water injection system, SCR with ammonia injection, oxidation catalyst, and operate exclusively on pipeline quality natural gas to limit emission levels from each turbine. The SPPE application provides the following proposed BACT normal operating emission limits for each CTG:

- NO_x: Emissions - 2.5 ppmvd at 15 percent O_2 and 4.49 lb/hr (excluding startup/shutdown and maintenance hours)
- CO: Emissions - 6.0 ppmvd at 15 percent O_2 and 6.89 lb/hr (excluding startup/shutdown and maintenance hours)
- VOC: Emissions – 0.94 lb/hr (excluding startup/shutdown and maintenance hours)
- PM_{10}: Emissions – 3.00 lb/hr

- SO_2: Emissions – 0.28 lbs/hr using pipeline quality natural gas (assumes SCAQMD default emission factor)
- NH_3: Emissions - 5 ppmvd at 15 percent O_2

Emissions from the cooling towers are exempt from permitting, but the cooling tower design is noted to have a controlled drift emission rate of 0.001% of the recirculating water flow (RERC 2004d, Attachment 8.1B Table 8.1B-2).

Emission Offsets

District Regulation XX requires that the applicant provide emission offsets, in the form of RECLAIM Trading Credits (RTCs), for the project's first year NO_x emissions. The project emissions of VOC, PM_{10}, and SO_2 are below 4 tons per year, therefore, under the provision of Regulation XIII Rule 1304 the applicant is exempt from the offset requirements of Rule 1303 (SCAQMD 2004f); however, the District will provide only a part of the project's VOC emission offsets[6] indirectly through its SIP approved NSR permitting program (SCAQMD 2004g). The District has assumed responsibility to provide VOC and NOx offsets for sources that are not otherwise offset and that have non-zero VOC and NOx emissions. These emissions are offset using the District's internal offset accounts at the assumed operating emission rate for the facility, which is defined by SCAQMD to be 80 percent of the permitted potential to emit. The District's internal offset bank is funded by orphaned shutdowns, and surplus emission reductions, and has more than enough available resources to offset the VOC emissions from the proposed RERC project (SCAQMD 2004f).

The applicant has proposed a diesel engine retrofit program to fully mitigate the project's operating PM_{10}, VOC and SO_2 operating emissions (RPU 2004).

AIR QUALITY Table 23 shows the applicant's estimate of the emission liabilities that they will be mitigating. Detailed annual emissions information is provided in **AIR QUALITY Table 17**.

[6] The DIS concluded, due to a misunderstanding of SCAQMD's Federal and State New Source Review (NSR) equivalency program and associated internal offset account procedures, that all of the Rule 1304 offset exempt emissions from the project would be offset by SCAQMD using internal offset accounts. This was the case for the recently licensed El Segundo and Vernon projects; however, the NSR equivalence procedures for those existing major sources are different than the procedures used for a new source. Specifically, the RERC is not considered a major source of PM_{10} and SO_2 emissions, so the major source NSR equivalency program procedures do not apply. SCAQMD's State NSR equivalency program requires the offsetting of any increases in NOx or VOC emissions not otherwise offset, but only requires the actual emissions, rather than the permitted potential to emit, to be offset. For this program SCAQMD defines the actual emissions to be 80% of the permitted potential to emit.

AIR QUALITY Table 23
RERC Annual Emission Liability and Applicant's Offset Proposal (lb/year)

	NO_x	VOC	PM_{10}	SO_2
RERC Emission Liability – First Year[a]	39,464	2,976	7,900	736
Applicants First Year Mitigation Proposal	39,464[b]	2,976	7,900	736[c]
RERC Emission Liability – After First Year	19,206	2,600	7,900	736
Applicants After First Year Mitigation Proposal	19,206[b]	2,600	7,900	736[c]

From SPPEA (RERC 2004d), (RERC 2004c, DR#17, 18) and staff's interpretation of the applicant's offset proposal (RPU 2004).

Note(s):

NA – not applicable

a. The first year emissions are higher than subsequent year emissions partially due to actual initial commissioning emissions levels and mainly due to SCAQMD regulation that requires emission calculations to use full load uncontrolled emission estimates until a certified continuous emission monitoring system (CEMS) is in place. The applicant's emission estimate assumes that the CEMS will be certified within 250 hours of the first firing of each turbine. However, in reality the control systems should be functional within 20 hour or so after the first firing of each turbine.

b. The applicant's offset proposal for NO_x includes the District's offset requirements, which for this pollutant provide an overall offset ratio of 1:1,

c. The applicant is proposing to offset the project's SO_2 emissions with PM_{10} emission reductions. SO_2 emission offsets are considered necessary only because SO_2 is a PM_{10} precursor, so staff will accept PM_{10} reductions at an appropriate interpollutant offset ratio to mitigate SO_2 emission impacts.

NO_x Emission Offsets

AIR QUALITY Table 24 and **Table 25** provides a summary of the total project NO_x emissions and identifies the project RTC offset sources for the first year emissions and subsequent year emissions, respectively.

AIR QUALITY Table 24
NO_x RTC First Year Offsets Available for RERC

RTC Seller/ Original Source Location	**RTC Date**	**Amount (lbs)**
Intermetro Industries (Inland Credit) 9393 Arrow Route Rancho Cucamonga	2005	9,500
Pomona Paper Company (Inland Credit) 1404 W. Holt Avenue Pomona	2005	4,000
West Newport Oil (Coastal Credit) 1080 W. 17th Costa Mesa	2005	2,000
Mission Dye (Coastal Credit) 905E. 8th St. Los Angeles	2005	4,846
Ocean Air (Coastal Credit) Original source location(s) is unknown	2005	1,000
Calpine (Coastal Credit) Original source location(s) is unknown	2005	18,500
Total RTCs Provided	---	39,846
Total First Year NO_x Emissions	---	39,464
First Year RTC Balance Remaining [a]	---	382

From updated SPPEA (RERC 2004d) and Data Response 17 (RERC 2004c, RERC 2004e).

Note:

a. A zero balance means full mitigation, a negative balance indicates an offsets deficit, and a positive balance indicates offsets are available in excess of required District levels (any excess RTCs may be later be sold at the applicant's discretion).

AIR QUALITY Table 25
NO_x RTC After First Year Offsets Available for RERC

RTC Seller/ Original Source Location	RTC Date	Amount (lbs)
Intermetro Industries (Inland Credit) 9393 Arrow Route Rancho Cucamonga	2006+	9,500
Pomona Paper Company (Inland Credit) 1404 W. Holt Avenue Pomona	2006+	4,000
West Newport Oil (Coastal Credit) 1080 W. 17th Costa Mesa	2006+	2,000
Mission Dye (Coastal Credit) 905E. 8th St. Los Angeles	2006+	4,846
Total RTCs Provided	---	20,346
Total After First Year NO_x Emissions	---	19,206
After First Year RTC Balance Remaining [a]	---	1,140

From updated SPPEA (RERC 2004d) and Data Response 17 (RERC 2004c, RERC 2004e).
Note:
a. A zero balance means full mitigation, a negative balance indicates an offsets deficit, and a positive balance indicates offsets are available in excess of required District levels (any excess RTCs may be later be sold at the applicant's discretion).

The Intermetro Industries RTCs were generated from a facility shutdown that occurred 3/30/04. The Pomona Paper Company RTCs were generated from a facility shutdown that occurred 10/30/02. The West Newport Oil RTCs were generated from a process change, date not provided. The Mission Dye RTCs were generated from a facility shutdown, date not provided. The RTCs obtained from Ocean Air and Calpine were obtained from a group of RTC credits that were pooled and transferred in a blind auction, so the original source locations of these coastal RTCs have not been able to be determined (RERC 2004e, DR #17).

SCAQMD rules allow the use of coastal or inland RTCs to offset inland emission sources, so the use of the coastal credits is in compliance with District regulations. The applicant's offset proposal will provide NO_x RTCs at a total offset ratio of 1:1 for the first year emissions and subsequent year's emissions. Therefore, staff has determined that the applicant's NO_x offset mitigation proposal satisfies CEQA mitigation requirements.

PM_{10}, VOC, and SO_2 Emission Offsets

The annual emissions of PM_{10}, VOC, and SO_2 are calculated to be below 4 tons per year, so under the requirements and exemptions of Rules1303 and 1304 the applicant does not have to offset these emissions through any District program[7]. However, the applicant has committed to fully offsetting the project's PM_{10}, VOC, and SO_2 emissions through the retrofit of local diesel fueled equipment, such as school buses, with tailpipe emission controls. The tailpipe emission controls, likely either diesel oxidation catalysts or diesel particulate matter filters (i.e. soot filters), would reduce PM_{10}, VOC and CO emissions. The PM_{10} emission reduction required under the diesel engine retrofit program will include the annual PM_{10} emission limit plus an additional amount of PM_{10}

[7] The project's VOC emissions will be offset by SCAQMD using their internal offset account by a ratio of 0.8:1 of the permitted potential to emit.

reduction to cover the facility's SO_2 (PM_{10} precursor) emissions based on an appropriate interpollutant offset ratio.

The proposed mitigation method would provide both PM_{10} and $PM_{2.5}$ emission offsets. The proposed RERC project's particulate emissions would be primarily comprised of fine particulate from natural gas combustion, and the diesel engine retrofit program would reduce diesel combustion fine particulate emissions. Therefore, ensuring adequate PM_{10} emission reductions should ensure that the project's $PM_{2.5}$ emissions are also fully mitigated.

Staff has performed a rough calculation that the applicant would need to retrofit approximately 100 to 130 school buses to obtain the necessary PM_{10} emission reductions. The VOC emission reductions that would result from using retrofit controls necessary to offset the project's PM_{10} emissions should be several times more than needed to fully offset the project's VOC emissions.

The Riverside Unified School District leases over two hundred school buses and there are several other school districts in the area that own or lease an additional number of buses. The applicant may also be able to retrofit municipal bus fleets or other local diesel vehicle fleets. Therefore, there are a sufficient number of buses available for retrofit for the applicant to meet the required number of offsets. Staff concludes that the proposed diesel engine retrofit program would provide a significant net air quality benefit to the local area, including a net benefit in terms of air toxic pollutant impacts. Staff has incorporated Condition of Exemption **AQ-1** to incorporate the proposed diesel engine retrofit program.

CO Emission Offsets

The project's estimated CO operating emissions are below the Rule 1304 CO emission offset exemption limit of 29 tons per year, so CO emission offsets will not be required by the District. While the air basin is listed as a CO non-attainment area, that designation is only due to conditions in South-Central Los Angeles. The ambient CO concentrations in the Riverside area are well below the CO ambient air quality standards. The state only designates the Los Angeles County portion of the air basin as a CO non-attainment area. For the purposes of this CEQA evaluation, staff: 1) considers the site area to be in attainment of the CO standards; 2) recognizes that the project's operating emissions do not have the potential to create a new exceedance of any CO ambient air quality standard; and 3) concludes that the project's CO emission impacts are less than significant and do not require additional offset mitigation. However, it should be noted that the applicant's proposed diesel engine retrofit program, used to offset the project's PM_{10}, VOC and SO_2 emissions, will also cause a reduction in CO emissions.

Staff Proposed Mitigation

Staff is satisfied that the project has been designed with BACT (maximum feasible emission mitigation) and that the project's nonattainment pollutants and precursor pollutant emissions will, by the applicant's proposed use of NOx RTCs and the applicant's proposed diesel engine retrofit program, be mitigated to a minimum 1:1 offset ratio. Therefore, staff is not proposing additional operational mitigation for this

project. However, staff has added Condition of Exemption **AQ-1** to incorporate the applicant's proposed diesel engine retrofit program.

SCAQMD may incorporate, in the air permit, minor revisions to the annual emission limits specified in this analysis; and there is the potential that minor revisions to the PM_{10} emissions from the permit exempt equipment (cooling tower and ZLD system) may occur based on final plant design considerations. Therefore, Condition of Exemption **AQ-1** requires the applicant to identify any minor revisions to the emission estimates and mitigate based on the final revised operating annual emission limits.

C. Result in Cumulatively Considerable Increase in Criteria Pollutant in Non-Attainment Status: Less Than Significant With Mitigation Incorporated

The applicant performed a cumulative impact analysis. This analysis identifies whether the project, along with other identified air pollution sources known to be under development in the project area, would create a cumulative air quality impact. To evaluate the potential for cumulative emission impacts, SCAQMD records were searched for all permits issued to facilities within a six-mile radius of the proposed project location, which may contribute to cumulative impacts. No permits constituting an emissions increase have been issued within a one-year period (RERC 2004c, Data Response 19). Recently issued environmental impact reports were also researched, however none exist for projects within a six-mile radius of the proposed project location (RERC 2004c, Data Response 19). The Riverside WWTP Cogeneration IC engines (3 Caterpillar G3606 engines rated at 1600 hp each, with an electric output of 1 MW each) were originally issued construction permits in August 1998 and were fully operational at least as of 2002 (SCAQMD 2004e), so they are reflected in the 2002 and 2003 ambient pollutant concentration data. Considering the fact that new and significant cumulative emission sources were not found to be currently proposed near the project site, no additional cumulative air quality impact modeling analysis was performed by the applicant for RPU's proposed Riverside Energy Resource Center project (with the approval of CEC air quality staff); and no significant cumulative impacts (beyond the impacts listed under impact issue "B" above) are expected.

Applicant's Proposed Mitigation

See the mitigation description under impact issue "B" above.

Staff Proposed Mitigation

See the mitigation description under impact issue "B" above.

Intervenor Cumulative Impacts Issue

CURE contends that RERC has not included in its cumulative impact assessment the proposed capital improvement project at the Riverside WWTP nor included the potential for the construction of two additional turbines at the project site (CURE 2004a, 2004b, 2004d). However, staff only requires the completion of cumulative analyses for conceptually developed projects with known emissions and exhaust parameters. These projects must be in the permitting phase, in construction, or recently completed and not operating long enough to be included in recent ambient air quality data. The WWTP

capital improvement project[8] is not yet in the permitting phase and the potential for additional turbines at the RERC site is currently speculative. Therefore, neither of these projects are currently defined or can be assessed cumulatively with the RERC project (i.e. there are no emission estimates, no stack parameters, etc. to allow an analysis of these currently speculative projects). However, if either of these projects do go forward, they may have to include the currently proposed RERC project in the cumulative impacts analyses for their respective CEQA documents. Also, if additional turbines are proposed to be added to the RERC then that project will have to go through the full CEC licensing process and will also have to be permitted by the SCAQMD.

D. Expose Sensitive Receptors to Substantial Pollutant Concentrations: Less Than Significant With Mitigation Incorporated

Existing Residential and Sensitive Receptors

Power Plant Site

The project is located in a light industrial/commercial area in the City of Riverside, adjacent to the City's wastewater treatment plant (WWTP). This light industrial/commercial area acts as a buffer zone between the project site and the bulk of the residential and non-residential sensitive receptors in the area. The nearest residence is located at the Hidden Valley Kennel, approximately 200 meters south of the proposed project site, and the next two closest residences are located more than one-quarter and more than one-half mile from the proposed project site, respectively. The nearest non-residential sensitive receptor location (i.e. schools, hospitals) to the proposed project site is the Indian Hills Elementary School that is located more than three-quarters of a mile to the north of the proposed project site (RERC 2004e, Data Response 20).

Also, as described in the Socioeconomics analysis, the population within a 6-mile radius of the proposed RERC site is a predominately minority community with some census block areas that are predominately low-income. Therefore, this community exceeds staff's environmental justice community designation criteria. However, because the proposed project would comply with all regulatory requirements with regard to air quality and assuming that the applicant will comply with the Conditions of Exemption

[8] Information regarding the WWTP capital improvement project (RIVERSIDE 2004) indicates that the majority of improvements will not impact air pollutant emissions and that on the whole the improvements are likely to reduce emissions rather then increase emissions. The improvements with a potential to impact emissions include: 1) replacing an existing cooling tower; 2) replacing an existing flare; 3) adding odor control; and 4) upgrading biosolids handling. The other improvements generally consist of replacing old and warn equipment/parts and improvements to wastewater or sewer features that will not impact air quality. Staff believes that the new cooling tower and flare are likely to reduce emissions or have a minimal change on emissions based on a balance between reduced emission profiles and increased capacity; that the odor control improvements are likely to reduce VOC and reduced sulfur emissions; and that the biosolids handling improvements might cause a minimal increase in particulate emissions. No major new equipment or major changes to emission potential of the existing Cogeneration Unit existing boilers at the WWTP have been identified. Staff does not believe that any of the WWTP improvements listed by the City of Riverside would cause an increase in emissions that would justify a cumulative impacts analysis.

recommended by staff and listed below, no significant air quality exposure impacts are anticipated.

Linear Facilities

The linear facilities to be constructed as a result of this project are as follows:

- Approximately 1.75 miles of double-circuit 69-kV subtransmission line to RPU's existing Mountain View Substation.
- Approximately 140 feet natural gas service line would be constructed to connect from the Sempra transmission pipeline that passes next to the northeast corner of the project site to the on-site meter station.
- Reclaimed water supply interconnection line from the adjacent WWTP.
- Potable water (from the City of Riverside general water supply), and fire water (from the City of Riverside potable water system) supply interconnection lines. Proposed connection points for these lines would be in Acorn Avenue, approximately 60 feet from the southwest corner of the project site.

Of these linear facilities, only the transmission line construction, most of which is replacement of existing transmission facilities, will occur any distance from the proposed project site or occur in close proximity to residential receptors. There may be short-term impacts at residences and sensitive receptor locations that are adjacent to the transmission construction route. However, the time frame for these construction impacts is very short at any one location and the construction emissions will be minor at all locations. Additionally, linear construction activities are subject to applicable construction mitigation measures listed in Conditions of Exemption **AQ-C3** through **AQ-C5** that will reduce the linear construction emissions. Therefore, the potential air quality impacts from linear facility construction are considered to be less than significant.

Temporary Construction Emissions

As described earlier under impact issue "B," the proposed project would generate temporary emissions from constructing the RERC facility and the associated transmission lines, and the adjacent natural gas and water pipelines. As a result, nearby residential land uses may experience short-term adverse air quality impacts, if mitigation measures were not incorporated. However, through the implementation of the suggested mitigation measures and Conditions of Exemption during construction, it is assumed that the project would not result in any significant air quality impacts.

Operation Emissions

As described earlier under impact issue "B," the proposed project would generate a substantial level of criteria pollutant emissions from operating the 96-megawatt (MW) natural gas-fired simple-cycle power plant. However, the emissions of NO_x, VOC, SO_2 and PM_{10} would be offset through the applicant's surrender of NO_x RTCs, through the District's SIP approved NSR permitting program (VOC, SO_2 and PM_{10}), and additional mitigation provided by the applicant through diesel emission reduction programs. The pollutant impact modeling did not show that any substantial pollutant concentrations would occur at any receptor location for any of the proposed operating scenarios. As a

result, staff concludes that the criteria pollutant emissions generated from this project would not cause any significant air quality impacts to sensitive receptors.
In addition, because the proposed project would comply with all regulatory requirements with regard to air quality and no significant air quality impacts are anticipated, the project will not have disproportionate significant impacts on the identified minority and low-income community.

Applicant's Proposed Mitigation

See the mitigation description under impact issue "B" above.

Staff Proposed Mitigation

See the mitigation description under impact issue "B" above.

E. Create Objectionable Odors: Less Than Significant Impact

Construction activities do not generally create strong or objectionable odors. There may be minor odors associated with the use or refueling of the diesel and gasoline powered equipment, or from painting or other surface treatments (i.e. building roofing or roadway paving). In addition, the closest residential receptor is located over one-quarter mile from the proposed site and the nearest sensitive receptor is located over three-quarter of a mile from the proposed site, which will allow any objectionable construction odors to disperse substantially before reaching residential or sensitive receptors. No significant impacts are expected from these temporary minor odor sources.

No odor impact is anticipated from the operation of the main power facilities, as no significant emissions of odorous compounds would result from the operation of the gas turbines, cooling towers, or ZLD system under normal operations. The odor threshold for ammonia is approximately 5 to 10 ppm, and the stack emissions of ammonia for the gas turbine exhaust are expected to be limited to 5 ppm on a 1-hour basis. There is the potential for somewhat higher short-term ammonia emission concentrations (i.e. concentration spikes), particularly during startup, shutdown or during load swings. However, after dispersion the maximum ammonia concentrations at ground level will be well below the odor threshold. Odors resulting from accidents could occur; please see the **HAZARDOUS MATERIAL MANAGEMENT** section for further discussion of the consequence analysis of ammonia storage and handling accidents.

Applicant's Proposed Mitigation

None.

Staff Proposed Mitigation

None.

RESPONSE TO PUBLIC AND AGENCY COMMENTS

The written comments concerning air quality that have been received from CURE have been addressed in the appropriate sections of this Air Quality analysis.

CONCLUSIONS

Staff concludes that with appropriate mitigation the proposed RERC project would not result in significant air quality impacts.

The applicant is proposing to fully offset the project's operating emissions with a combination of NOx RTCs and a diesel engine retrofit program. The emission reductions would be in place prior to initial commissioning of the turbines. Staff has included Condition of Exemption **AQ-1** to incorporate the applicant's proposed diesel engine retrofit program.

In order to mitigate potentially significant NO_2 and PM_{10} construction emission impacts, staff recommends the Conditions of Exemption **AQ-C1** through **AQ-C5** to mitigate the RERC construction equipment emissions and fugitive dust emissions to less than significant levels.

CONDITIONS OF EXEMPTION

GENERAL CONDITIONS

AQ-G1 The project owner shall provide the CPM copies of all Permit-to-Construct (PTC) and Permit-to-Operate (PTO) air quality permits received from the District.

Verification: The project owner shall submit copies of the PTCs and PTOs to the CEC CPM upon receipt of those permits from the SCAQMD.

AQ-G2 The project owner shall report to the CPM the quantities of each greenhouse gas (GHG) emitted on an annual basis as a result of project and related facility operation. GHG emissions shall be reported as equivalent CO_2 pounds and the method shall conform to the California Climate Action Registry General Reporting Protocol.

Verification: GHG emissions shall be reported to the CPM as part of the annual compliance reports required by the General Conditions of Exemption.

STAFF CONSTRUCTION AND PRE-CONSTRUCTION CONDITIONS

AQ-C! The project owner shall provide an air quality construction mitigation plan (AQCMP), for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions **AQ-C3** through **AQ-C5**.

Verification: At least 60 days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the AQCMP. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. Otherwise, the plan shall be deemed approved.

AQ-C1 The project owner shall designate and retain an on-site Air Quality Construction Mitigation Manager (AQCMM) who shall be responsible for directing and documenting compliance with conditions AQ-C3 through AQ-C5 for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more air quality construction mitigation monitors. The AQCMM shall have full access to areas of construction of the project site and linear facilities. The AQCMM may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and any air quality construction mitigation monitors. The AQCMM and all delegated monitors must be approved by the CPM before the start of ground disturbance.

AQ-C2 The on-site AQCMM shall submit to the CPM, in a monthly report, a construction mitigation report that demonstrates compliance with the following mitigation measures:

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered until sufficiently wet. The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All construction equipment vehicle tires shall be washed or cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All entrances to the construction site shall be graveled or treated with water or dust soil stabilization compounds.

g) No construction vehicles can enter the construction site unless through the treated entrance roadways.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags to prevent run-off to the roadway.

i) All paved roads within the construction site shall be swept twice daily when construction activity occurs.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily on days when construction

activity occurs, and twice daily on any other day when dirt or runoff from the construction site is visible on the public roadways.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Wind erosion control techniques, such as windbreaks, water, chemical dust suppressants, and vegetation shall be used on all construction areas that may be disturbed. Any windbreaks used shall remain in place until the soil is stabilized or permanently covered with vegetation.

n) Any construction activities that may cause fugitive dust in excess of the visible emission limits specified in Condition **AQ-C4** shall cease when the wind exceeds 25 miles per hour unless water, chemical dust suppressants, or other measures have been applied to reduce dust to the limits set forth in **AQ-C4**.

o) Diesel Fired Engines

(1) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

(2) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions set forth herein.

(3) All large construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 1 ARB/EPA certified standards for off-road equipment unless certified by the on-site AQCMM that a certified engine is not available for a particular item of equipment. All large construction diesel engines, which have a rating of 50 hp or more, where a Tier 1 or better ARB/EPA certified engine was not available shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for the specific engine types.

(4) Equipment will be properly maintained in accordance with manufacturer guidelines

(5) Engine idling for all onroad and off-road diesel-fueled equipment shall be limited to no more than five minutes, as practical.

Where mitigation measures identical to or similar to those provided in (a) through (n) are required in District Rule 403, the most stringent requirement shall apply and be identified in the AQCMP; except when the requirements listed in (a) through (n) would conflict with the

implementation and compliance with a District rule requirement. Any conflict between mitigation measures (a) through (n) and District Rule 403 will be identified in the AQCMP.

Verification: In a monthly report, the project owner shall provide the CPM a copy of the construction mitigation report and all diesel fuel purchase records, including quantity purchased, which clearly demonstrates compliance with condition **AQ-C3**.

AQ-C4 The AQCMM, or the air quality construction mitigation monitors, shall continuously monitor the construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: In a monthly report, the project owner shall document any additional mitigation measures or activity shutdowns required pursuant to AQ-C4.

AQ-C5 Construction activities shall be limited to an eleven-hour per day schedule, and activities that may cause fugitive dust shall not begin before 7 am daily.

Verification: The project owner shall provide records of compliance as part of a monthly report.

STAFF OPERATION CONDITION

AQ-1 The project owner shall provide emission reductions in the amounts of 7,900 lbs/year of PM_{10}, 2,600 lbs/year of VOC, and 736 lbs/year of SO_2. The reductions shall be from combustion sources within CPM approved proximity

of the project site and shall be fully implemented no later than the start of project commissioning activities. The emission reductions shall be developed from any combination of the following sources:

1. The retrofit of emission controls on diesel powered school buses within the Riverside School District or directly adjacent school districts.
2. The retrofit of emission controls on diesel powered equipment under the direct or contracted control of the City of Riverside.
3. The reduction or elimination of other combustion sources within the city boundaries of the City of Riverside as approved by the CPM.
4. Any remaining emission reductions not provided as specified above from their voluntary surrender and retirement of emission reduction credits or RECLAIM trade credits banked with the South Coast Air Quality Management District and approved by the CPM.

The project owner shall verify or provide any minor revisions to the PM_{10}, VOC and SO_2 emissions levels provided above based on the final South Coast Air Quality Management District air quality permit annual potential to emit limits for each of the three listed pollutants, as well as, any revised emission estimates for equipment exempt from South Coast Air Quality Management District permitting (such as the cooling tower and ZLD system).

Verification: The project owner shall, in consultation with representatives of the appropriate school district or City of Riverside, provide to the CPM an Emission Reduction Implementation Plan (ERIP) that establishes the earliest possible start date and expected completion date for the emission reductions. The ERIP shall, at a minimum, specifically identify the types and numbers of vehicles or equipment to be retrofit, the make, model, horsepower, approximate annual hours of use (or annual fuel consumed) and age of each engine (since last overhaul), the approximate emissions (PM_{10}, VOC and SO_2) and expected emission reductions for each engine.

The project owner shall report, on a monthly basis, the progress of all emission reduction plans and estimate any remaining emission reductions that are expected to be the basis for the purchase and voluntary retirement of appropriate emission reduction credits from the South Coast Air Quality Management District as approved by the CPM.

Interpollutant trading of SO_2 for PM_{10} and PM_{10} for SO_2 emission reductions shall be allowed at interpollutant trading ratios determined to be appropriate for Riverside in consultation with the South Coast Air Quality Management District.

The project owner shall submit the ERIP to the CPM for approval no later than 30 days following approval of the SPPE by the Energy Commission. The project owner shall submit monthly status reports to the CPM.

If RECLAIM trading credits are used as part of the required emission reductions specified in this condition, and if those credits have limited year(s) of use, then the project owner shall provide replacement emission reductions annually as necessary to maintain the required emission reductions using any of the emission reduction methods specified in this condition, and shall provide the quantity and method of reduction for the

expired RECLAIM trading credit replacement emission reductions in a report due to the CPM one month prior to the expiration of the RECLAIM trading credits.

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE RIVERSIDE ENERGY RESOURCE CENTER PROJECT	**Docket No. 04-SPPE-01** **PROOF OF SERVICE** **Revised 6/9/04*

I, **Angela Hockaday**, declare that on **August 3, 2004**, I deposited copies of the attached **Final Initial Study - Air Quality for the Riverside Energy Resource Center project,** in the United States mail in Sacramento, CA with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus 12 copies to the following address:

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Attn: Docket No. 04-SPPE-01
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In addition to the documents sent to the Commission Docket Unit, also send individual copies of all documents to:

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I declare that under penalty of perjury that the foregoing is true and correct.

(Signature)

* * * *

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